



State of Idaho

## DEPARTMENT OF WATER RESOURCES

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C. L. "BUTCH" OTTER  
Governor

DAVID R. TUTHILL, JR.  
Director

November 27, 2007

Ms. Debbie Suehr  
Bureau of Reclamation  
1150 N. Curtis Road  
Boise, ID 83706

RE: Request under Freedom of Information Act

Dear Debbie:

The Idaho Department of Water Resources requests copies of the following information under the Freedom of Information Act (FOIA):

Minidoka Project, ID-WY, North Side Pumping Division – DPR appendix

- *Project Lands* (June 1952; rev. July 1956) no.1
- *Supplement to Project Lands* (1956)
- *Water Supply Supplemental* (1954); no. 1
- *Supplemental Drainage* (1954); no. 1

Minidoka Project, ID-WY, North Side Pumping Division, *Definite Plan Report, Volume 1, General Plan, February 1955, Region 1*

- Three revision sheets inside

Minidoka Project, ID-WY, North Side Pumping Extension – PFWD appendix

- *Drainage Investigations, Supporting Computations* (December 1974)

Minidoka Project, ID-WY, North Side Pumping Division Extension – Planning Report/Draft EIS

- *Hydrology* (July 1985); no. 1 [include large drawings/maps full size]

Minidoka Project, ID-WY, North Side Pumping Division, *Drainwater Management Plan, Draft Environmental Assessment*, December 1993, PN Region

Minidoka Project, ID, WY, North Side, *Minidoka North Side Resource Management Plan*, January 2005, SRAO (CD version)

If you have any questions, please call me at (208) 287-4841.



RECEIVED  
BUREAU OF RECLAMATION  
SALT LAKE CITY, UTAH  
JUL 10 1956

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

North Side Pumping Field Division  
Rupert, Idaho

July 5, 1956

IN REPLY REFER TO:	
40	17/10
Booke	
FILE	

To: Regional Director, Boise, Idaho  
Attention: 400

From: Construction Engineer, Rupert, Idaho

Subject: Supplemental Land Certification--North Side Pumping Division,  
Minidoka Project, Idaho

We are transmitting, under separate cover, marked maps showing location of lands for subject certification. The attached table shows the acreage breakdown by land class for the supplemental certification.

Please note that to bring the Project Lands Appendix dated June 1, 1952 up to date, the following changes should be made:

On line 7, page 1, the figure 69,500 should be changed to read 80,750. On line 2, page 25, under the paragraph headed "The Selected Area" the figure 12,850 should be changed to read 13,650 and the word "net" should be deleted. On line 3 of the same paragraph the figure 52,510 should be changed to read 67,100 and on line 4 of the same paragraph the word "net" should be deleted.

By copy of this letter 3 copies of the attached table and 3 complete sets of the marked maps showing location of subject certification are being transmitted to the Assistant Commissioner and Chief Engineer, Attention: D-740.

*C. L. Kime*

Enclosure No. 162224  
(under separate cover)

Copy to: Assistant Commissioner and Chief Engineer, Denver, w/encls.  
Project Superintendent, Burley, Idaho, w/table encl. only)

KLEIDOKA PROJECT  
NORTH SIDE MOUNTAIN DIVISION  
IDAHO

DEFINITE PLAN REPORT  
SUPPLEMENT  
TO  
1952 PROJECT LANDS APPENDIX

December 1954  
Revised June 1956

LAND CLASSIFICATION--SUMMARY DATA

DATE

1. AREA

REGION \_\_\_\_\_  
PROJECT Montrose Project, 1950  
DIVISION North Side Funding Division  
UNIT Group 7 and 8 Valley Areas  
OTHER \_\_\_\_\_

2. BASE MAPS

AERIAL PHOTO ☒ SCALE 1:1000  
TOPOGRAPHIC ☒ SCALE 1:1000  
PLANE TABLE ☐ SCALE \_\_\_\_\_  
OTHER ☐ SCALE \_\_\_\_\_

3. FIELD WORK

INIT. 10/1/54 COMP. 10/1/54 OTHER 10/1/54 APPENDIX REPORT 10/1/54

4. ACREAGE CLASSIFIED

	TOTAL SURVEY	PROJECT OR UNIT		
		IRRIGATED	NONIRRIGATED	TOTAL
CLASS 1	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
CLASS 2	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
CLASS 3	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
CLASS 4	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
SUBTOTAL	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
CLASS 5				
CLASS 6W				
CLASS 6	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
R.O.W.	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
TOTAL	<u>1,000.0</u>		<u>1,000.0</u>	<u>1,000.0</u>
* IRRIGABLE AREA. PRODUCTIVE AREA <u>1,000.0</u>				
ACREAGE NOT CLASSIFIED _____				

5. NUMBER OF BORINGS AND PITS

	MINIMUM	AVERAGE	TOTAL
SHALLOW (5')	<u>10</u>	<u>10</u>	<u>10</u>
DEEP (OVER 10')			
OPEN PIT OR DEEP PROFILES			

6. SUPPLEMENTAL PROCEDURES

SALINITY ☒ SODIUM ☒  
pH ☒ GYPSUM ☐  
LINE ☒ LEACHING ☒  
MECH. ANAL. ☒ ORG. MATTER ☐  
H<sub>2</sub>O CONDUCT. ☒ FIELD CAPACITY ☒  
INFILTRATION ☒ WILTING POINT ☐  
BULK DENSITY ☒ H<sub>2</sub>O STABILITY ☐  
OTHER ☐

7. SPECIFICATIONS AND INFORMATIVE APPRAISALS

TYPE OF SPECS.: GENERAL OR REGIONAL ☐ PHYSICAL ☐ PROJECT ☒ OTHER ☐

ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: 1,000.0 1,000.0 1,000.0 1,000.0

TYPE OF APPRAISALS: LAND USE ☒ PRODUCTIVITY ☒ LAND DEVEL. ☒ WATER REQUIR. ☒

LAND DRAINABILITY ☒ OTHER ☐

DESCRIPTION OF CLASS 4: for use irrigable water project plans (see specifications).

DESCRIPTION OF CLASS 5: None

8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)

WATER SUPPLY ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☐ PAYMENT CAPACITY ☐  
FARM UNIT LAYOUT ☒ REVIEW BY WATER USERS ☐ O.M. + R ☒

9. USE OF LAND CLASSIFICATION

WATER REQUIREMENTS ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ IRRIGATION ASSESSMENTS ☒  
LAND APPRAISAL ☒ FARM UNIT DEVELOPMENT ☐ LAND USE AND MANAGEMENT ☒ IRRIGATION BENEFITS ☒ OTHER ☐

10. PRIOR SURVEYS OR CLASSIFICATIONS

TYPE AND AGENCY	YEAR	SCALE	COVERAGE
<u>U.S.G.S. 1941 Survey</u>	<u>1941</u>	<u>1 in 100,000</u>	<u>100%</u>

11. REVIEWS AND COOPERATION

OFFICE OR AGENCY	DATE
<u>U.S. Dept. of Reclamation</u>	<u>10/1/54</u>
<u>U.S. Army Corps of Engineers</u>	<u>10/1/54</u>
<u>U.S. Navy</u>	<u>10/1/54</u>

12. DATE OF SECRETARIAL CERTIFICATION



**ACREAGE TABULATIONS**  
**1952 and 1956 Land Classification Certifications**  
**North Side Pumping Division--Minidoka Project**

IRRIGABLE AREAS (Acres)				
Land class	1952 Certification	1956 Certification	Total	
1	36,160	1,164.2	37,324.2	
2	25,130	3,465.5	28,595.5	
3	8,210	6,620.3	14,830.3	
Total	69,500	11,250.0	80,750.0	

**IRRIGABLE AREAS BY SUPPORTING REPORTS**  
**(Acres)**

Land class	1952 Project lands appendix	1954 Supplement		
	1952 Certification	1956 Certification	1956 Certification	
1	36,160	462.9	701.3	
2	25,130	2,000.7	1,374.8	
3	8,210	1,655.5	4,064.8	
Total	69,500	4,209.1	7,040.9	

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION  
WILBUR A. BECKELDER, Commissioner

REGION 1  
H. T. NELSON, Regional Director

MINIDOKA PROJECT  
NORTH SIDE PUMPING DIVISION  
IDAHO

DEFINITE PLAN REPORT  
SUPPLEMENT  
TO  
1952 PROJECT LANDS APPENDIX

Boise, Idaho  
December 1954  
Revised June 1956

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SUPPLEMENTAL PROJECT LANDS APPENDIX  
NORTH SIDE PUMPING DIVISION  
IDAHO

INTRODUCTION

As approved September 30, 1950, Public Law 864, 81st Congress, 2nd Session, authorized the irrigation of the land on the North Side Pumping Division of the Minidoka Project. In the initial development 69,500 irrigable acres were selected from an area of about 122,400 acres classified in detail. The irrigable area selected for development included 13,650 acres in Unit A to be served water by pumping from Snake River and 55,850 acres in Unit B to be served by pumping of ground water.

During the summer of 1954 an additional area of about 8,400 acres in the northeast part of the Division were classified in detail. This was done so that from the remaining more favorably located land withdrawn for reclamation, 8,150 additional acres of the best land authorized for development could be selected. This detailed land classification embraced an area in the shallower ground-water belt near Minidoka in which about 5,000 acres adjoining the area under development had already been classified but not included in the initial area of 69,500 acres selected for irrigation development (see General Map). Thus, in this area there is a total of about 13,500 acres from which the 8,150 irrigable acres can be selected to be served by pumping from wells designated as the Group 7 Wells. Tables 5A and 6A show the location and classification of the previously classified lands included in the area to be served by these wells. Up to 1954 this increases the area to be served from wells from 55,850 irrigable acres to 64,000.

This supplemental project lands appendix deals with the detailed classification of some 8,400 acres remaining unclassified when the Definite Plan Report of August 1952 was issued.

DIVISION LANDS CLASSIFIED IN 1954

Location and Extent

The 8,400 acres classified in detail during 1954 for inclusion in the North Side Pumping Division of the Minidoka Project were the last remaining Reclamation withdrawn lands to be classified for irrigation under the plans for development of that Division. These lands adjoin the northeastern edge of the area already classified as a more or less continuous narrow strip consisting of land on each side of the main line of the Union Pacific railroad for a distance of about 10 miles west from the vicinity of the Minidoka station.



### Physical Land Features

These lands which lie just inside the northeastern edge of the Division are at elevations of from about 100 to 150 feet higher than at the southern edge because of the general rise northward of the loess-mantled lava plain. Topographically, there is a markedly discernable rise in elevation which coincides roughly with the northeastern exterior boundary of the area embracing the 69,500 acres initially certified for development.

This pronounced rise, together with a northward bench-like increase in elevation, has promoted development of a more clearly defined dendritic drainage pattern than to the south. Between the intermittent drainageways are for the most part broadly undulating and gently sloping land bodies generally well suited to irrigation development. The underlying basalt outcrops occasionally on the higher points of rolling land and along the outer edges of the flatter lands lying in the drainageways; but only in the extreme western part do these outcroppings give rise to any significantly continuous areas of scabland.

Northward from the sharp rise in elevation there is significantly higher lime accumulations in the subsoils and the substratum overlying the basalt bedrock than is common to most of the remainder of the Division. In this area the high permeability of the surface soil, together with the underlying creviced basalt and well-developed dendritic drainage-pattern should prevent or alleviate any tendency to over-saturation which might arise from slow-up of the internal soil and underdrainage where lime cemented layers occur in the subsoil and substratum. In the vicinities of nearby Hazelton and Eden, land with similar topographic, soil and substratum characteristics are well drained and highly productive after more than 40 years under irrigation.

### Soils

The soils, as elsewhere on the Division, have developed from airborne and windblown material deposited to variable depth over uneven basaltic lava of unknown thickness. Like these soils they have light colored, mellow, permeable, silty surface soils high in mineral nutrients but low in organic matter and nitrogen. Also similarly the subsoils have a high lime content but the compaction and cementation for the most part is more generally and highly developed and often extends well into the substratum.

According to the 1928 Soil Survey Report of the United States Department of Agriculture most of the soils in this part of the upland plain are members of the Minidoka series. As distinguished from the Portneuf soils, which are the dominant soils elsewhere in the Division, the Minidoka soils are described as having much higher subsoil and substratum lime accumulation, that characteristically is in the form of

Table 5--ACREAGE OF LAND CLASSES - SUPPLEMENTAL SURVEY 1954

NORTH SIDE PUMPING DIVISION  
Minidoka Project, Idaho

Location			Arable					Non-Arable		
Sec.	Twp.	Rge.	1	2	3	5E	Total	4	6	Total
15	7	24	49.2	22.1	68.3		139.6	2.3	18.1	20.4
22	7	24	97.5	29.6	294.9		422.0	20.4	37.6	58.0
23	7	24	202.4	72.0	273.0		547.4	59.9	33.7	93.6
26	7	24	63.4	25.5	193.7		282.6	17.4	9.3	26.7
27	7	24	29.8	17.2	144.1		191.1	9.3	12.0	21.3
28	7	24	62.1	139.9	237.9		439.9	0.3	24.0	24.3
27	7	25	8.4	23.9	104.5		136.8	15.0	8.2	23.2
29	7	25	0.0	4.0	140.3		144.3	5.0	10.7	15.7
30	7	25	0.0	88.1	321.8		409.9	24.6	16.8	41.4
31	7	25	0.0	81.5	306.0		387.5	11.9	29.1	41.0
32	7	25	0.0	73.4	475.8		549.2	18.0	32.9	50.9
33	7	25	69.7	27.1	465.3		562.1	0.1	46.1	46.2
34	7	25	40.0	16.8	238.1		294.9	14.5	8.3	22.8
3	8	25	102.5	50.8	423.9		577.2	24.4	15.4	39.8
4	8	25	0.0	106.6	479.1		585.7	15.6	40.5	56.1
5	8	25	0.0	208.7	218.2		426.9	0.1	12.9	13.0
10	8	25	5.5	79.6	164.6		249.7	10.7	7.9	18.6
11	8	25	0.0	26.2	314.5		340.7	0.0	7.3	7.3
12	8	25	0.0	160.2	282.0		442.2	30.4	167.8	198.2
13	8	25	0.0	178.9	25.6		204.5	15.0	195.6	210.6
TOTALS			730.5	1432.1	5171.6		7334.2	294.9	734.2	1029.1

Table 5A--ACREAGE OF LAND CLASSES FROM INITIAL SURVEY

NORTH SIDE PUMPING DIVISION  
Minidoka Project, Idaho

Location			Arable				Non-Arable		
Sec.	Twp.	Rge.	1	2	3	Total	4P	6	Total
33	7	24		50.7	243.7	294.4	0.7	45.8	46.5
35	7	24	4.5	63.1	227.5	295.1	9.5	7.7	17.2
6	8	25		88.2	38.0	126.2		12.0	12.0
15	8	25		32.3	64.2	96.5		6.7	6.7
7	8	25	30.7	52.8	259.3	342.8	16.5	8.7	25.2
Totals			35.2	287.1	832.7	1155.0	26.7	80.9	107.6

R



- 1/ Arable less 4 percent for additional rights-of-way.
- 2/ Irrigable less 6 percent for farmsteads, farm roads, and farm ditches.

Table 6A--LAND CLASSIFICATION SUMMARY OF LANDS FROM INITIAL SURVEY

NORTH SIDE PUMPING DIVISION  
Minidoka Project, Idaho

Land Class	: Arable Land : Acres	: Irrigable Land 1/ : Acres	: Productive Land 2/ : Acres
Class 1	: 35.2	: 33.9	: 31.8
Class 2	: 287.1	: 275.7	: 259.2
Class 3	: 832.7	: 799.5	: 751.6
Totals	: 1,155.0	: 1,109.1	: 1,042.6

- 1/ Arable Land less 4 percent for additional rights-of-way.
- 2/ Irrigable Land less 6 percent for farmsteads, farm roads, and farm ditches.

Irrigability Classification and Development  
of the Group 7 Wells Area

The lands classified as irrigable in this supplemental survey and the previously classified lands included in the 8,150 irrigable acres of this group, like those elsewhere in Unit B, will obtain irrigation water by pumping from wells. Likewise, as determined by location, elevation and capacities of the individual wells, the potentially irrigable lands will be laid out into farm units of acceptable size (see memorandum - table 8.)

The irrigable area map of the supplemental survey of 1954, following page 14, shows the arable lands and the tentative exterior boundary of the irrigable lands upon completion of the survey and in table 6, the arable, irrigable, and productive acreages are shown. Table 5-A gives the location and land class breakdown of the lands previously classified, and in table 6-A, the arable, irrigable, and productive acreages of that area are shown. The irrigable acreages will be subject to some minor changes upon the completion of the farm unit layout.

<b>1. AREA</b> REGION <u>1</u> PROJECT <u>Minuteman Project, Idaho</u> DIVISION <u>North Side Pumping Division</u> UNIT <u>Group 7 - Valle Arriba</u> OTHER _____					<b>2. BASE MAPS</b> AERIAL PHOTO <input type="checkbox"/> SCALE <u>1:4000</u> TOPOGRAPHIC <input type="checkbox"/> SCALE <u>1:4000</u> PLANE TABLE <input type="checkbox"/> SCALE _____ OTHER <input type="checkbox"/> SCALE _____																																																																																																																								
<b>3. FIELD WORK</b> INIT. <u>1/27 &amp; 1/28</u> COMP. <u>7/2/74</u> OTHER <u>8/2/74</u> APPENDIX REPORT <u>11/25/74</u>																																																																																																																													
<b>4. ACREAGE CLASSIFIED</b> <table border="1" style="width:100%"><thead><tr><th rowspan="2"></th><th rowspan="2">TOTAL SURVEY</th><th colspan="3">PROJECT OR UNIT</th></tr><tr><th>IRRIGATED</th><th>NONIRRIGATED</th><th>TOTAL</th></tr></thead><tbody><tr><td>CLASS 1</td><td>733.7</td><td></td><td>733.7</td><td>733.7</td></tr><tr><td>CLASS 2</td><td>1,720.2</td><td></td><td>1,090.9</td><td>1,090.9</td></tr><tr><td>CLASS 3</td><td>6,004.3</td><td></td><td>5,734.3</td><td>5,734.3</td></tr><tr><td>CLASS 4</td><td>321.6</td><td></td><td>321.6</td><td>---</td></tr><tr><td>SUBTOTAL</td><td>8,880.8</td><td></td><td>8,872.5</td><td>8,872.5</td></tr><tr><td>CLASS 5</td><td></td><td></td><td></td><td></td></tr><tr><td>CLASS 6W</td><td></td><td></td><td></td><td></td></tr><tr><td>CLASS 6</td><td>513.1</td><td></td><td>513.1</td><td>513.1</td></tr><tr><td>R.O.W.</td><td>334.8</td><td></td><td>334.8</td><td>334.8</td></tr><tr><td>TOTAL</td><td>10,029.7</td><td></td><td>9,954.7</td><td>9,954.7</td></tr><tr><td colspan="5">* IRRIGABLE AREA, PRODUCTIVE AREA <u>7,661.0</u></td></tr><tr><td colspan="5">ACREAGE NOT CLASSIFIED _____</td></tr></tbody></table>						TOTAL SURVEY	PROJECT OR UNIT			IRRIGATED	NONIRRIGATED	TOTAL	CLASS 1	733.7		733.7	733.7	CLASS 2	1,720.2		1,090.9	1,090.9	CLASS 3	6,004.3		5,734.3	5,734.3	CLASS 4	321.6		321.6	---	SUBTOTAL	8,880.8		8,872.5	8,872.5	CLASS 5					CLASS 6W					CLASS 6	513.1		513.1	513.1	R.O.W.	334.8		334.8	334.8	TOTAL	10,029.7		9,954.7	9,954.7	* IRRIGABLE AREA, PRODUCTIVE AREA <u>7,661.0</u>					ACREAGE NOT CLASSIFIED _____					<b>5. NUMBER OF BORINGS AND PITS</b> <table border="1" style="width:100%"><thead><tr><th></th><th>MINIMUM</th><th>AVERAGE</th><th>TOTAL</th></tr></thead><tbody><tr><td>SHALLOW (5')</td><td><u>25 per section</u></td><td><u>25 per section</u></td><td><u>340</u></td></tr><tr><td>DEEP (OVER 10')</td><td></td><td></td><td><u>5</u></td></tr><tr><td>OPEN PIT OR DEEP PROFILES</td><td></td><td></td><td><u>5</u></td></tr></tbody></table> <b>6. SUPPLEMENTAL PROCEDURES</b> <table border="1" style="width:100%"><tbody><tr><td>SALINITY</td><td><input checked="" type="checkbox"/></td><td>SODIUM</td><td><input checked="" type="checkbox"/></td></tr><tr><td>pH</td><td><input type="checkbox"/></td><td>GYPHUM</td><td><input type="checkbox"/></td></tr><tr><td>LINE</td><td><input checked="" type="checkbox"/></td><td>LEACHING</td><td><input checked="" type="checkbox"/></td></tr><tr><td>MECH. ANAL.</td><td><input checked="" type="checkbox"/></td><td>ORG. MATTER</td><td><input type="checkbox"/></td></tr><tr><td>H<sub>2</sub>O CONDUCT.</td><td><input checked="" type="checkbox"/></td><td>FIELD CAPACITY</td><td><input checked="" type="checkbox"/></td></tr><tr><td>INFILTRATION</td><td><input checked="" type="checkbox"/></td><td>WILTING POINT</td><td><input checked="" type="checkbox"/></td></tr><tr><td>BULK DENSITY</td><td><input checked="" type="checkbox"/></td><td>H<sub>2</sub>O STABILITY</td><td><input type="checkbox"/></td></tr><tr><td>OTHER</td><td><input type="checkbox"/></td><td></td><td></td></tr></tbody></table>						MINIMUM	AVERAGE	TOTAL	SHALLOW (5')	<u>25 per section</u>	<u>25 per section</u>	<u>340</u>	DEEP (OVER 10')			<u>5</u>	OPEN PIT OR DEEP PROFILES			<u>5</u>	SALINITY	<input checked="" type="checkbox"/>	SODIUM	<input checked="" type="checkbox"/>	pH	<input type="checkbox"/>	GYPHUM	<input type="checkbox"/>	LINE	<input checked="" type="checkbox"/>	LEACHING	<input checked="" type="checkbox"/>	MECH. ANAL.	<input checked="" type="checkbox"/>	ORG. MATTER	<input type="checkbox"/>	H <sub>2</sub> O CONDUCT.	<input checked="" type="checkbox"/>	FIELD CAPACITY	<input checked="" type="checkbox"/>	INFILTRATION	<input checked="" type="checkbox"/>	WILTING POINT	<input checked="" type="checkbox"/>	BULK DENSITY	<input checked="" type="checkbox"/>	H <sub>2</sub> O STABILITY	<input type="checkbox"/>	OTHER	<input type="checkbox"/>		
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CLASS 3	6,004.3		5,734.3	5,734.3																																																																																																																									
CLASS 4	321.6		321.6	---																																																																																																																									
SUBTOTAL	8,880.8		8,872.5	8,872.5																																																																																																																									
CLASS 5																																																																																																																													
CLASS 6W																																																																																																																													
CLASS 6	513.1		513.1	513.1																																																																																																																									
R.O.W.	334.8		334.8	334.8																																																																																																																									
TOTAL	10,029.7		9,954.7	9,954.7																																																																																																																									
* IRRIGABLE AREA, PRODUCTIVE AREA <u>7,661.0</u>																																																																																																																													
ACREAGE NOT CLASSIFIED _____																																																																																																																													
	MINIMUM	AVERAGE	TOTAL																																																																																																																										
SHALLOW (5')	<u>25 per section</u>	<u>25 per section</u>	<u>340</u>																																																																																																																										
DEEP (OVER 10')			<u>5</u>																																																																																																																										
OPEN PIT OR DEEP PROFILES			<u>5</u>																																																																																																																										
SALINITY	<input checked="" type="checkbox"/>	SODIUM	<input checked="" type="checkbox"/>																																																																																																																										
pH	<input type="checkbox"/>	GYPHUM	<input type="checkbox"/>																																																																																																																										
LINE	<input checked="" type="checkbox"/>	LEACHING	<input checked="" type="checkbox"/>																																																																																																																										
MECH. ANAL.	<input checked="" type="checkbox"/>	ORG. MATTER	<input type="checkbox"/>																																																																																																																										
H <sub>2</sub> O CONDUCT.	<input checked="" type="checkbox"/>	FIELD CAPACITY	<input checked="" type="checkbox"/>																																																																																																																										
INFILTRATION	<input checked="" type="checkbox"/>	WILTING POINT	<input checked="" type="checkbox"/>																																																																																																																										
BULK DENSITY	<input checked="" type="checkbox"/>	H <sub>2</sub> O STABILITY	<input type="checkbox"/>																																																																																																																										
OTHER	<input type="checkbox"/>																																																																																																																												
<b>7. SPECIFICATIONS AND INFORMATIVE APPRAISALS</b> TYPE OF SPECS.: GENERAL OR REGIONAL <input type="checkbox"/> PHYSICAL <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: <u>22.35</u> \$ _____ \$ _____ \$ _____ TYPE OF APPRAISALS: LAND USE <input checked="" type="checkbox"/> PRODUCTIVITY <input checked="" type="checkbox"/> LAND DEVEL. <input checked="" type="checkbox"/> WATER REQUIR. <input checked="" type="checkbox"/> LAND DRAINABILITY <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> DESCRIPTION OF CLASS 4: <u>not irrigable under project plans (see specifications)</u> DESCRIPTION OF CLASS 5: <u>None</u>																																																																																																																													
<b>8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)</b> WATER SUPPLY <input checked="" type="checkbox"/> DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/> DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/> PAYMENT CAPACITY <input checked="" type="checkbox"/> FARM UNIT LAYOUT <input checked="" type="checkbox"/> REVIEW BY WATER USERS <input type="checkbox"/> O.M.+R <input checked="" type="checkbox"/>																																																																																																																													
<b>9. USE OF LAND CLASSIFICATION</b> WATER REQUIREMENTS <input checked="" type="checkbox"/> DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/> DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/> IRRIGATION ASSESSMENTS <input checked="" type="checkbox"/> LAND APPRAISAL <input checked="" type="checkbox"/> FARM UNIT DEVELOPMENT <input checked="" type="checkbox"/> LAND USE AND MANAGEMENT <input checked="" type="checkbox"/> IRRIGATION BENEFITS <input checked="" type="checkbox"/> OTHER <input checked="" type="checkbox"/>																																																																																																																													
<b>10. PRIOR SURVEYS OR CLASSIFICATIONS</b> <table border="1" style="width:100%"><thead><tr><th>TYPE AND AGENCY</th><th>YEAR</th><th>SCALE</th><th>COVERAGE</th></tr></thead><tbody><tr><td><u>U.S.D.A. Soil Survey</u></td><td><u>1973</u></td><td><u>1"=1 mi. complete</u></td><td></td></tr></tbody></table>					TYPE AND AGENCY	YEAR	SCALE	COVERAGE	<u>U.S.D.A. Soil Survey</u>	<u>1973</u>	<u>1"=1 mi. complete</u>		<b>11. REVIEWS AND COOPERATION</b> <table border="1" style="width:100%"><thead><tr><th>OFFICE OR AGENCY</th><th>DATE</th></tr></thead><tbody><tr><td><u>Ida. Department of</u></td><td><u>1977-80</u></td></tr><tr><td><u>and Extension</u></td><td><u>8/18/70 and</u></td></tr><tr><td><u>Service</u></td><td><u>6/30/74</u></td></tr><tr><td><u>U.S.D.A. - F.D.A.</u></td><td><u>Continuing</u></td></tr></tbody></table>					OFFICE OR AGENCY	DATE	<u>Ida. Department of</u>	<u>1977-80</u>	<u>and Extension</u>	<u>8/18/70 and</u>	<u>Service</u>	<u>6/30/74</u>	<u>U.S.D.A. - F.D.A.</u>	<u>Continuing</u>																																																																																																		
TYPE AND AGENCY	YEAR	SCALE	COVERAGE																																																																																																																										
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<b>12. DATE OF SECRETARIAL CERTIFICATION</b>																																																																																																																													

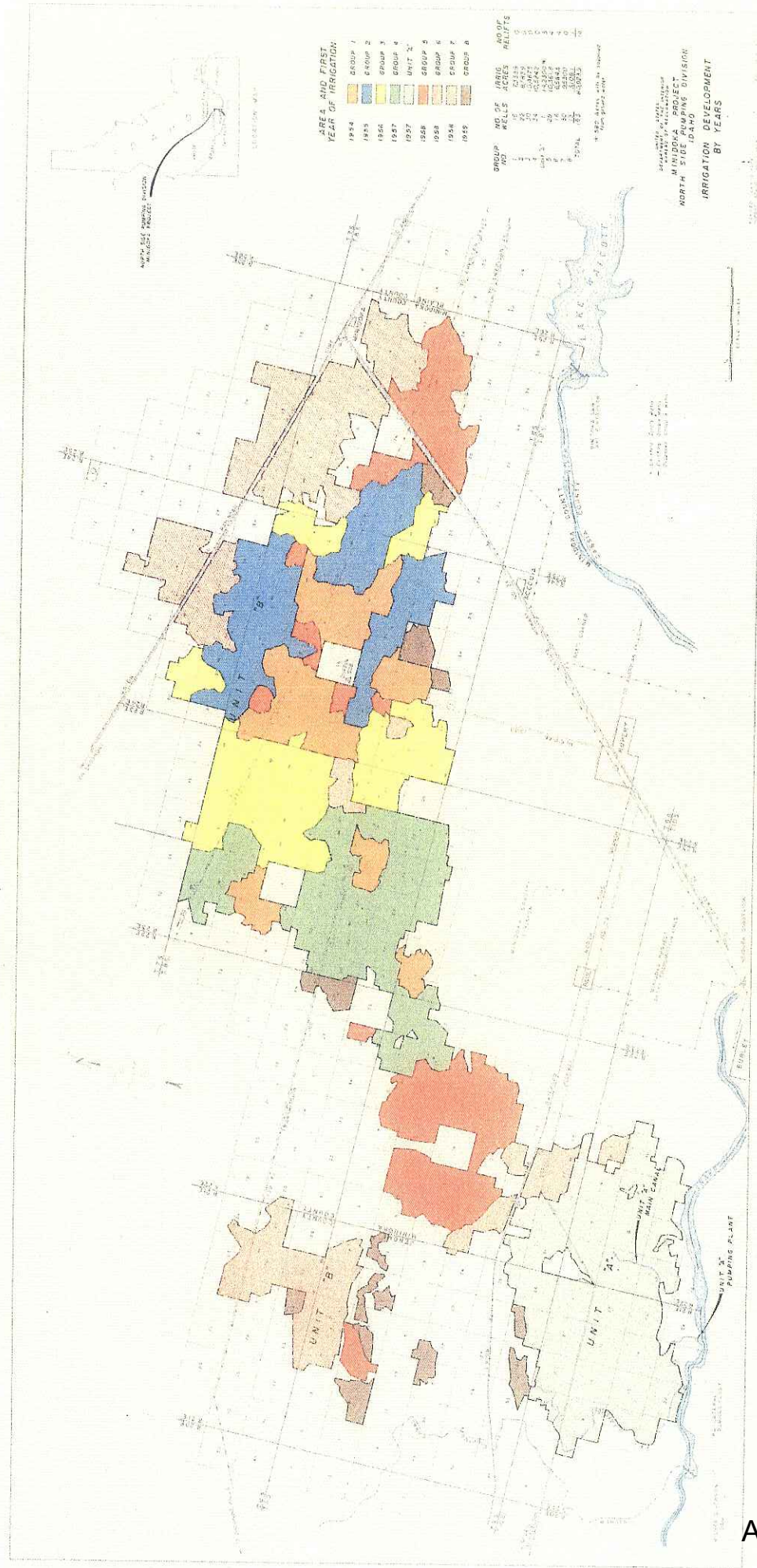
## APPENDED MATERIAL

This part of the Supplement to the Project Lands Appendix of 1952 deals with that portion of the North Side Pumping Division of the Minidoka Project designated as the area to be served by the Group 8 Wells. This area is outlined on the map entitled Irrigation Development by Yarns, and on the land classification maps that follow.

The Group 8 Wells area consists of 3,100 irrigable acres, which, when added to the 69,500 irrigable acres initially certified in 1952, and the 8,150 acres covered for certification in the 1954 Supplement, raises the total acreage of the division proposed for development to 80,750 irrigable acres.

The derivation of the 3,100 irrigable acres for development in the area to be served by the Group 8 Wells is shown on the Land Classification Summary Data Sheet. The soils, land conditions and classification of these lands are described in the original 1952 Project Lands Appendix.





MINIDOKA PROJECT  
NORTH SIDE PUMPING DIVISION  
IDAHO

DEFINITE PLAN REPORT  
SUPPLEMENT  
TO  
1952 PROJECT LANDS APPENDIX

December 1954  
Revised June 1956

LAND CLASSIFICATION--SUMMARY DATA

DATE

1. AREA

REGION \_\_\_\_\_  
PROJECT Minidoka Project, Idaho  
DIVISION North Side Pumping Division  
UNIT Group 7 and 8 Wells Areas  
OTHER \_\_\_\_\_

2. BASE MAPS

AERIAL PHOTO ☒ SCALE 1:4800  
TOPOGRAPHIC ☒ SCALE 1:4800  
PLANE TABLE ☐ SCALE \_\_\_\_\_  
OTHER ☐ SCALE \_\_\_\_\_

3. FIELD WORK

INIT. 1947 & 1954 COMP. 7/1/54 OTHER 8/1/54 APPENDIX REPORT 1952 & 1/15/54

4. ACREAGE CLASSIFIED

	TOTAL SURVEY	PROJECT OR UNIT		
		IRRIGATED	NONIRRIGATED	TOTAL
CLASS 1	<u>1,212.7</u>		<u>1,164.2</u>	<u>1,164.2</u>
CLASS 2	<u>3,610.2</u>		<u>3,465.5</u>	<u>3,465.5</u>
CLASS 3	<u>6,895.3</u>		<u>6,620.3</u>	<u>6,620.3</u>
CLASS 4	<u>362.6</u>		<u>362.6</u>	<u>--</u>
SUBTOTAL	<u>12,080.8</u>		<u>11,612.6</u>	<u>11,250.0</u>
CLASS 5				
CLASS 6W				
CLASS 6	<u>1,290.1</u>		<u>1,290.1</u>	<u>1,290.1</u>
R.O.W.	<u>510.0</u>		<u>481.0</u>	<u>450.0</u>
<b>TOTAL</b>	<b><u>13,880.9</u></b>		<b><u>13,383.7</u></b>	<b><u>12,990.1</u></b>
* IRRIGABLE AREA, PRODUCTIVE AREA <u>10,575</u>				
ACREAGE NOT CLASSIFIED <u>--</u>				

5. NUMBER OF BORINGS AND PITS

	MINIMUM	AVERAGE	TOTAL
SHALLOW (5')	<u>16 per Sec.</u>	<u>22 per Sec.</u>	<u>460</u>
DEEP (OVER 10')			<u>9</u>
OPEN PIT OR DEEP PROFILES			<u>9</u>

6. SUPPLEMENTAL PROCEDURES

SALINITY ☒ SODIUM ☒  
pH ☒ GYPSUM ☐  
LINE ☒ LEACHING ☒  
MECH. ANAL. ☒ ORG. MATTER ☐  
H<sub>2</sub>O CONDUCT. ☒ FIELD CAPACITY ☒  
INFILTRATION ☒ WILTING POINT ☒  
BULK DENSITY ☒ H<sub>2</sub>O STABILITY ☐  
OTHER ☐

7. SPECIFICATIONS AND INFORMATIVE APPRAISALS

TYPE OF SPECS.: GENERAL OR REGIONAL ☐ PHYSICAL ☐ PROJECT ☒ OTHER ☐

ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: 12.38 average \$ \_\_\_\_\_ \$ \_\_\_\_\_ \$ \_\_\_\_\_

TYPE OF APPRAISALS: LAND USE ☒ PRODUCTIVITY ☒ LAND DEVEL. ☒ WATER REQUIR. ☒

LAND DRAINABILITY ☒ OTHER ☐

DESCRIPTION OF CLASS 4: not irrigable under project plans (see specifications).

DESCRIPTION OF CLASS 5: None

8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)

WATER SUPPLY ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ PAYMENT CAPACITY ☒  
FARM UNIT LAYOUT ☒ REVIEW BY WATER USERS ☐ O.M.+R ☒

9. USE OF LAND CLASSIFICATION

WATER REQUIREMENTS ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ IRRIGATION ASSESSMENTS ☒  
LAND APPRAISAL ☒ FARM UNIT DEVELOPMENT ☒ LAND USE AND MANAGEMENT ☒ IRRIGATION BENEFITS ☒ OTHER ☒

10. PRIOR SURVEYS OR CLASSIFICATIONS

TYPE AND AGENCY	YEAR	SCALE	COVERAGE
<u>U.S.D.A. Soil Survey</u>	<u>1923</u>	<u>1"=1 mi</u>	<u>complete</u>

11. REVIEWS AND COOPERATION

OFFICE OR AGENCY	DATE
<u>Ida. Expt. Station and Extension Service</u>	<u>1947-48</u>
<u>U.S.D.A. - F.H.A.</u>	<u>4/10/50 &amp; 4/30/54</u>
	<u>continuing</u>

12. DATE OF SECRETARIAL CERTIFICATION

A&B 299

**ACREAGE TABULATIONS**  
**1952 and 1956 Land Classification Certifications**  
**North Side Pumping Division--Minidoka Project**

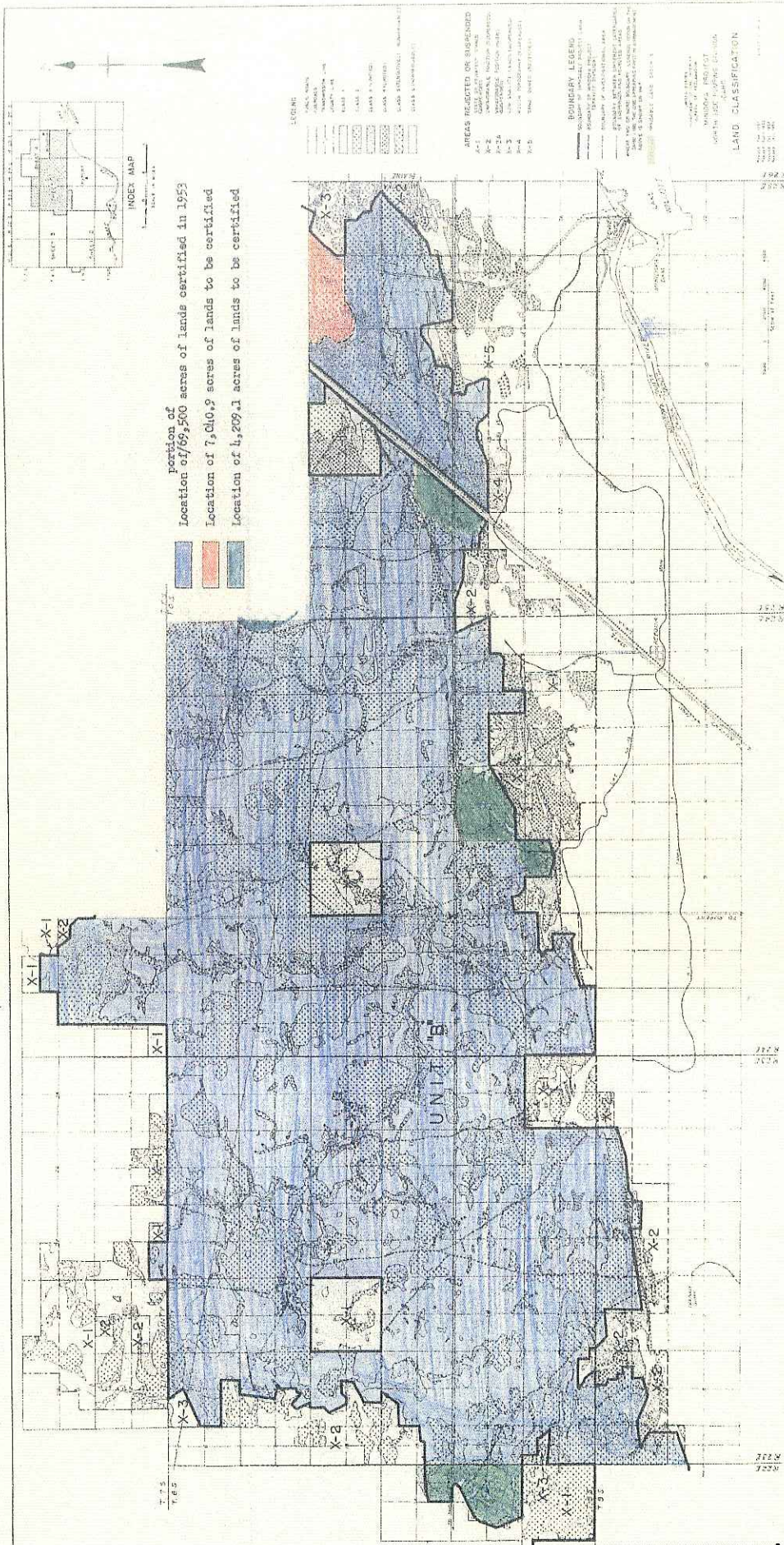
**IRRIGABLE AREAS (Acres)**

Land class	1952	1956	Total
	Certification	Certification	
1	36,160	1,164.2	37,324.2
2	25,130	3,465.5	28,595.5
3	8,210	6,620.3	14,830.3
Total	69,500	11,250.0	80,750.0

**IRRIGABLE AREAS BY SUPPORTING REPORTS**  
**(Acres)**

Land class	1952 Project lands appraisal	1954 Supplement
	1952 Certification	1956 Certification
1	36,160	462.9
2	25,130	2,090.7
3	8,210	1,655.5
Total	69,500	4,209.1







	1952 Classification Appendix		1954 Land Classification Supplement	Total Irrigable Certified 1956
	Arable	Irrigable Certified 1953	Irrigable Certified 1956	Irrigable Certified 1956
Unit A				
Class 1	10,375	9,960		9,960
Class 2	3,150	3,030		3,030
Class 3	690	660		660
Sub-Total	14,215	13,650		13,650
Unit B				
Class 1	28,650	26,200	701.3	27,502.1
Class 2	26,475	22,100	1,374.8	25,415.3
Class 3	14,775	7,550	4,964.8	14,182.6
Sub-Total	69,900	55,850	7,040.9	67,100
TOTALS	84,115	69,500	7,040.9	80,750
1/	Arable less 1% for additional right-of-way			

1959

Unit A

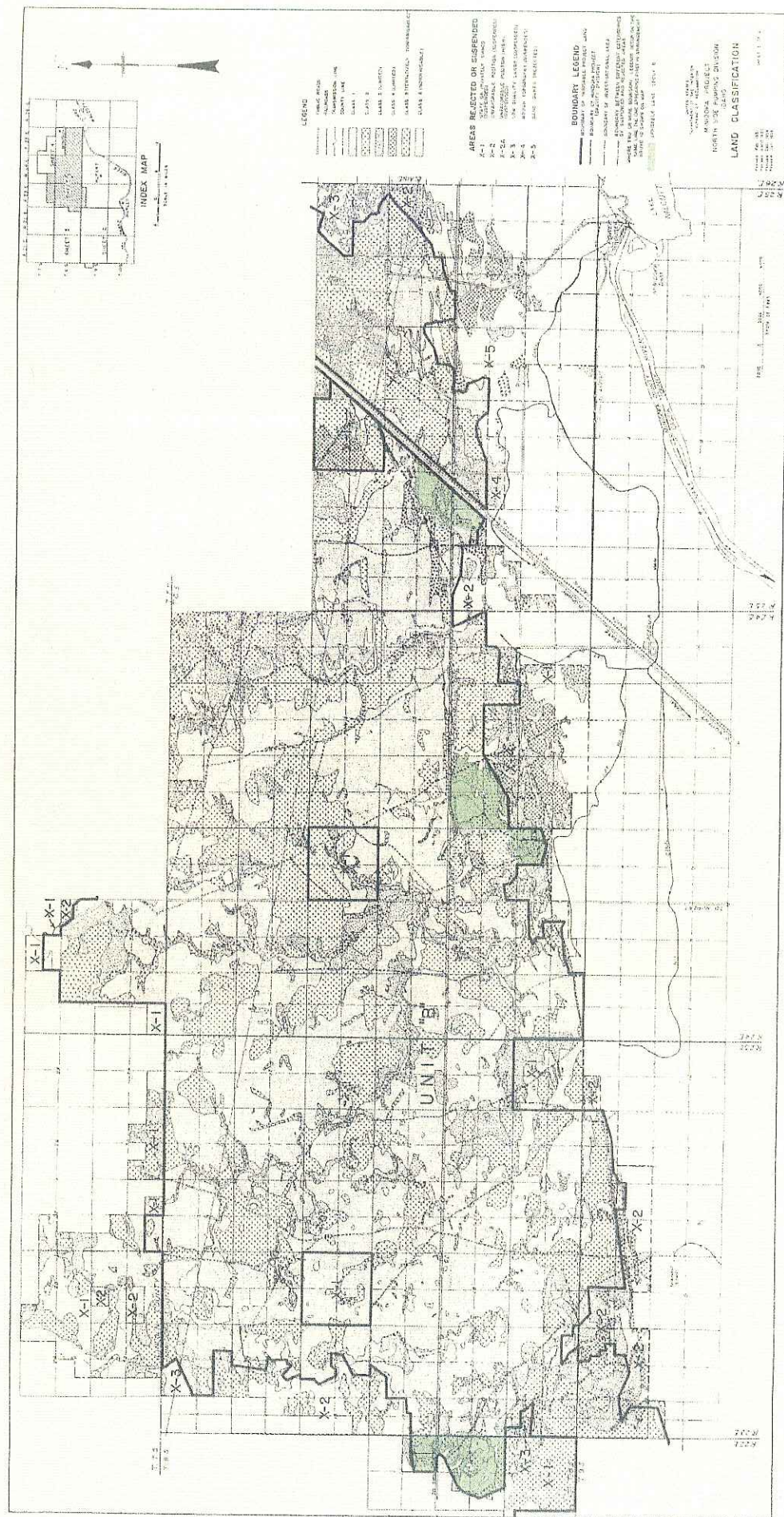
Class 1

Class 2

Class 3

7/10/56





UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION  
WILBUR A. DEWEETER, Commissioner

REGION 1  
H. T. NELSON, Regional Director

MINIDOKA PROJECT  
NORTH SIDE PUMPING DIVISION  
IDAHO

DEFINITE PLAN REPORT  
SUPPLEMENT  
TO  
1952 PROJECT LANDS APPENDIX

Boise, Idaho  
December 1954  
Revised June 1956

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MINIDOKA PROJECT  
NORTH SIDE PUMPING DIVISION  
IDAHO

DEFINITE PLAN REPORT  
SUPPLEMENT  
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PROJECT LANDS APPENDIX (~~1952~~)

December 1954

*Revised June 1956*



## LAND CLASSIFICATION--SUMMARY DATA

DATE

1. AREA		2. BASE MAPS	
REGION <u>1</u>	AERIAL PHOTO <input checked="" type="checkbox"/>	SCALE <u>1:4800</u>	
PROJECT <u>Timber Lake Irrigation</u>	TOPOGRAPHIC <input checked="" type="checkbox"/>	SCALE <u>1:4800</u>	
DIVISION <u>Timber Lake Irrigation</u>	PLANE TABLE <input type="checkbox"/>	SCALE	
UNIT <u>4th</u>	OTHER <input type="checkbox"/>	SCALE	
OTHER			

3. FIELD WORK	INIT. <u>1/15/54</u>	COMP. <u>7/1/54</u>	OTHER <u>1/15/54</u>	APPENDIX REPORT <u>1/15/54</u>
---------------	----------------------	---------------------	----------------------	--------------------------------

4. ACREAGE CLASSIFIED				5. NUMBER OF BORINGS AND PITS			
	TOTAL SURVEY	PROJECT OR UNIT			MINIMUM	AVERAGE	TOTAL
		IRRIGATED	NONIRRIGATED	TOTAL			
CLASS 1	1212.7		1164.2	1164.2	SHALLOW (5')	12 per acre	460
CLASS 2	3610.2		3465.5	3465.5	DEEP (OVER 10')		1
CLASS 3	6715.3		6620.3	6620.3	OPEN PIT OR DEEP PROFILES		4
CLASS 4	362.6		362.6		6. SUPPLEMENTAL PROCEDURES		
SUBTOTAL	12080.8		11612.6	11250.0	SALINITY	<input checked="" type="checkbox"/>	SODIUM <input checked="" type="checkbox"/>
CLASS 5					pH	<input checked="" type="checkbox"/>	GYPSUM <input type="checkbox"/>
CLASS 6W					LINE	<input checked="" type="checkbox"/>	LEACHING <input checked="" type="checkbox"/>
CLASS 6	1290.1		1290.1	1290.1	MECH. ANAL.	<input checked="" type="checkbox"/>	ORG. MATTER <input type="checkbox"/>
R.O.W.	510.0		480.0	450.0	H <sub>2</sub> O CONDUCT.	<input checked="" type="checkbox"/>	FIELD CAPACITY <input checked="" type="checkbox"/>
TOTAL	13760.9		13363.7	12790.1	H <sub>2</sub> O INFILTRATION	<input checked="" type="checkbox"/>	WILTING POINT <input checked="" type="checkbox"/>
* IRRIGABLE AREA. PRODUCTIVE AREA <u>10775</u>				BULK DENSITY	<input checked="" type="checkbox"/>	H <sub>2</sub> O STABILITY <input type="checkbox"/>	
ACREAGE NOT CLASSIFIED				OTHER	<input type="checkbox"/>		

7. SPECIFICATIONS AND INFORMATIVE APPRAISALS			
TYPE OF SPECS.: GENERAL OR REGIONAL <input type="checkbox"/> PHYSICAL <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>			
ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: \$ <u>12.30</u> \$ <u>      </u> \$ <u>      </u> \$ <u>      </u>			
TYPE OF APPRAISALS: LAND USE <input checked="" type="checkbox"/> PRODUCTIVITY <input checked="" type="checkbox"/> LAND LEVEL <input checked="" type="checkbox"/> WATER REQUIR. <input checked="" type="checkbox"/>			
LAND DRAINABILITY <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>			
DESCRIPTION OF CLASS 4: <u>AP not irrigable under proj. plans (see 4/15/54)</u>			
DESCRIPTION OF CLASS 5: <u>None</u>			

8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)			
WATER SUPPLY <input checked="" type="checkbox"/>	DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/>	DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/>	PAYMENT CAPACITY <input checked="" type="checkbox"/>
FARM UNIT LAYOUT <input checked="" type="checkbox"/>	REVIEW BY WATER USERS <input type="checkbox"/>	O.M.+R <input checked="" type="checkbox"/>	

9. USE OF LAND CLASSIFICATION			
WATER REQUIREMENTS <input checked="" type="checkbox"/>	DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/>	DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/>	IRRIGATION ASSESSMENTS <input checked="" type="checkbox"/>
LAND APPRAISAL <input checked="" type="checkbox"/>	FARM UNIT DEVELOPMENT <input checked="" type="checkbox"/>	LAND USE AND MANAGEMENT <input checked="" type="checkbox"/>	IRRIGATION BENEFITS <input checked="" type="checkbox"/> OTHER <input checked="" type="checkbox"/>

10. PRIOR SURVEYS OR CLASSIFICATIONS				11. REVIEWS AND COOPERATION	
TYPE AND AGENCY	YEAR	SCALE	COVERAGE	OFFICE OR AGENCY	DATE
<u>USDA</u>	<u>1921</u>	<u>1"=1 mi</u>	<u>40%</u>	<u>USDA</u>	<u>1/15/54</u>
12. DATE OF SECRETARIAL CERTIFICATION					

ACREAGE TABULATIONS  
1952 and 1956 Land Classification Certifications  
North Side Pumping Division--Minidoka Project

IRRIGABLE AREAS (Acres)				
Land class	1952	1956		
	Certification	Certification	Total	
1	36,160	36,895.2	36,895.2	37,521.2
2	25,130	26,780.5	26,780.5	3,595.5
3	8,210	13,974.3	13,974.3	17,830.3
Total	69,500	77,650	77,650	80,750.0

IRRIGABLE AREAS BY SUPPORTING REPORTS  
(Acres)

Land class	1952 Project	lands appendix	1954 Supplement
	1952 Certification	1956 Certification	1956 Certification
1	36,160	33.9	701.3
2	25,130	275.7	1,374.8
3	8,210	799.5	4,964.8
Total	69,500	1,109.1	7,040.9

UNITED STATES DEPARTMENT OF THE INTERIOR  
DOUGLAS McLAY, Secretary

BUREAU OF RECLAMATION  
WILBUR A. DEXHEIMER, Commissioner

REGION 1  
H. T. NELSON, Regional Director

MINIDOKA PROJECT  
NORTH SIDE PUMPING DIVISION  
IDAHO

DEFINITE PLAN REPORT  
SUPPLEMENT  
TO  
1952 PROJECT LANDS APPENDIX (~~2000~~)

Boise, Idaho  
December 1954  
*Revised June 1956*

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*Table 7 - Land Classification Summary Data*

## LIST OF MAPS AND CHARTS

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Sample Sheets of Topography used in Field Mapping	14
Sample Sheets of Detailed Land Classification	14

*Map showing location of deep profile samples and infiltration studies*

*Map showing topography of area classified in 1954*

*Land classification map of area classified in 1954*

Supplemental List  
(Supplemental List)

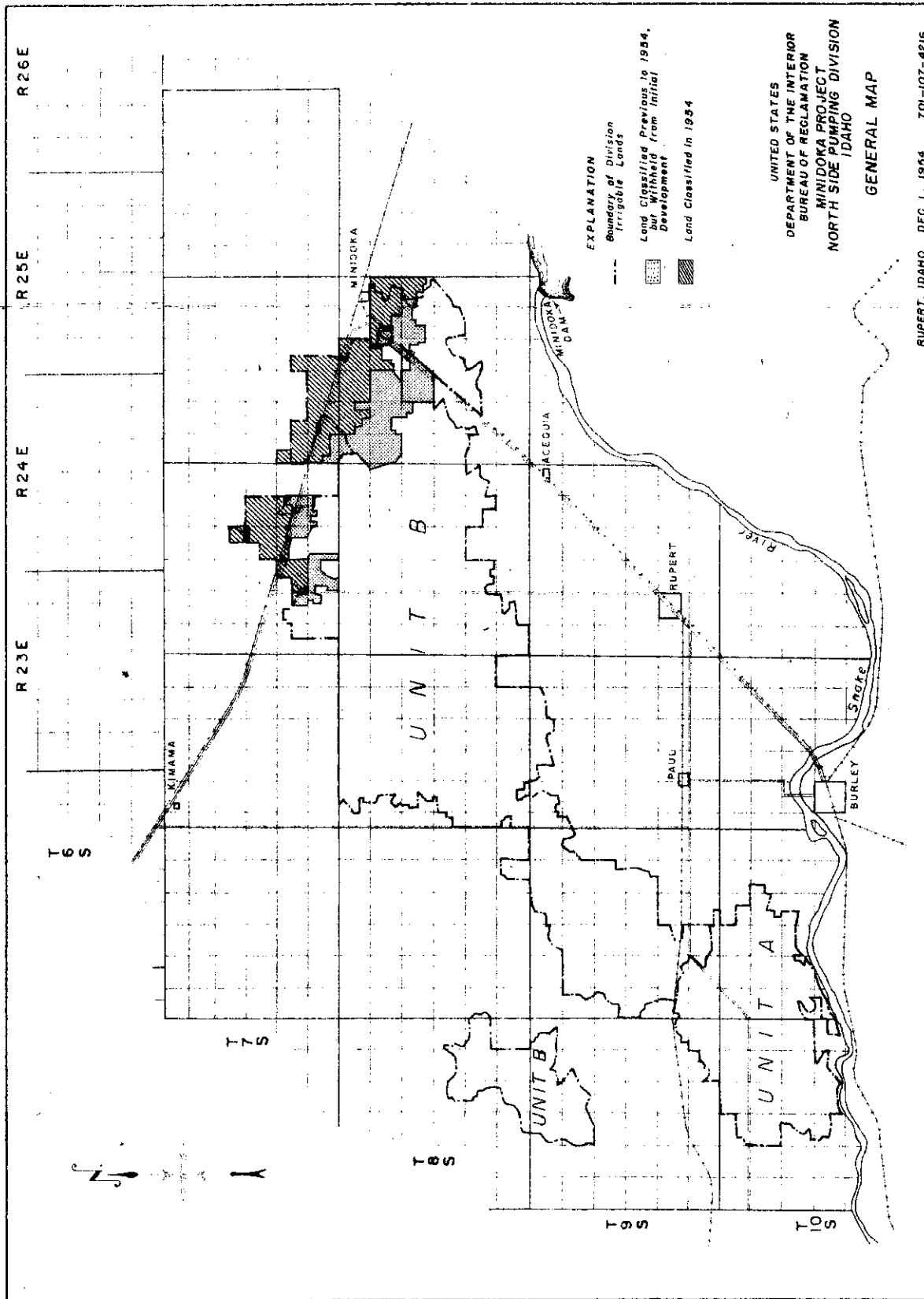
Land Classification Field Checks -- 2" = 100'

Topographic Maps -- 2" = 100'

Aerial Photographs -- 2" = 100'

Laboratory Report -- Analysis of four deep soil profile  
samples from the Windsor Project, North Side Surveying  
Division.

(on file at the office)





**SUPPLEMENTAL PROJECT LANDS APPENDIX  
NORTH SIDE PUMPING DIVISION  
IDaho**

**INTRODUCTION**

As approved September 30, 1950, Public Law 864, 81st Congress, 2nd Session, authorized the irrigation of the land on the North Side Pumping Division of the Minidoka Project. In the initial development 69,500 irrigable acres were selected from an area of about 122,400 acres classified in detail. The irrigable area selected for development included 13,650 acres in Unit A to be served water by pumping from Snake River and 55,850 acres in Unit B to be served by pumping of ground water.

During the summer of 1954 an additional area of about 8,400 acres in the northeast part of the Division were classified in detail. This was done so that from the remaining more favorably located land withdrawn for reclamation, 8,150 additional acres of the best land authorized for development could be selected. This detailed land classification embraced an area in the shallower ground-water belt near Minidoka in which about 5,000 acres adjoining the area under development had already been classified but not included in the initial area of 69,500 acres selected for irrigation development (see General Map). Thus, in this area there is a total of about 13,500 acres from which the 8,150 irrigable acres can be selected to be served by pumping from wells designated as the Group 7 Wells. Tables 5A and 6A show the location and classification of the previously classified lands included in the area to be served by these wells. Up to 1954 this increases the area to be served from wells from 55,850 irrigable acres to 64,000.

This supplemental project lands appendix deals with the detailed classification of some 8,400 acres remaining unclassified when the Definite Plan Report of August 1952 was issued.

**DIVISION LANDS CLASSIFIED IN 1954**

Location and Extent

The 8,400 acres classified in detail during 1954 for inclusion in the North Side Pumping Division of the Minidoka Project were the last remaining Reclamation withdrawn lands to be classified for irrigation under the plans for development of that Division. These lands adjoin the northeastern edge of the area already classified as a more or less continuous narrow strip consisting of land on each side of the main line of the Union Pacific railroad for a distance of about 10 miles west from the vicinity of the Minidoka station.

SUPPLEMENTAL PROJECT LANDS APPENDIX  
NORTH SIDE PUMPING DIVISION  
IDAHO

INTRODUCTION

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During the summer of 1954 an additional area of about 8,400 acres in the northeast part of the Division were classified in detail. This was done so that from the remaining more favorably located land withdrawn for reclamation, 8,150 <sup>additional</sup> acres of the best land authorized for development could be selected. This detailed land classification embraced an area in the shallower ground-water belt near Minidoka in which about 5,000 acres adjoining the area under development had already been classified but not included in the initial area of 69,500 acres selected for irrigation development (see General Map). Thus, in this area there is a total of about 13,400 acres from which the 8,150 irrigable acres can be selected to be served by pumping from wells designated as the Group 7 Wells. <sup>u</sup> This <sup>u</sup> increases the area to be served from wells from 55,850 irrigable acres to 64,000.

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### Physical Land Features

These lands which lie just inside the northeastern edge of the Division are at elevations of from about 100 to 150 feet higher than at the southern edge because of the general rise northward of the loess-mantled lava plain. Topographically, there is a markedly discernable rise in elevation which coincides roughly with the northeastern exterior boundary of the area embracing the 69,500 acres initially certified for development.

This pronounced rise, together with a northward bench-like increase in elevation, has promoted development of a more clearly defined dendritic drainage pattern than to the south. Between the intermittent drainageways are for the most part broadly undulating and gently sloping land bodies generally well suited to irrigation development. The underlying basalt outcrops occasionally on the higher points of rolling land and along the outer edges of the flatter lands lying in the drainageways; but only in the extreme western part do these outcroppings give rise to any significantly continuous areas of scabland.

Northward from the sharp rise in elevation there is significantly higher lime accumulations in the subsoils and the substratum overlying the basalt bedrock than is common to most of the remainder of the Division. In this area the high permeability of the surface soil, together with the underlying creviced basalt and well-developed dendritic drainage-pattern should prevent or alleviate any tendency to over-saturation which might arise from slow-up of the internal soil and underdrainage where lime cemented layers occur in the subsoil and substratum. In the vicinities of nearby Hazelton and Eden, land with similar topographic, soil and substratum characteristics are well drained and highly productive after more than 40 years under irrigation.

### Soils

The soils, as elsewhere on the Division, have developed from airborne and windblown material deposited to variable depth over uneven basaltic lava of unknown thickness. Like those soils they have light colored, mellow, permeable, silty surface soils high in mineral nutrients but low in organic matter and nitrogen. Also similarly the subsoils have a high lime content but the compaction and cementation for the most part is more generally and highly developed and often extends well into the substratum.

According to the 1928 Soil Survey Report of the United States Department of Agriculture most of the soils in this part of the upland plain are members of the Minidoka series. As distinguished from the Portneuf soils, which are the dominant soils elsewhere in the Division, the Minidoka soils are described as having much higher subsoil and substratum lime accumulation, that characteristically is in the form of

### Physical Soil Features

Those lands which lie just inside the northeastern edge of the Division are at elevations of from about 100 to 150 feet higher than at the southern edge because of the general rise northward of the loess-mantled lava plain. Topographically, there is a markedly discernable rise in elevation which coincides roughly with the northeastern exterior boundary of the area comprising the 67,500 acres ~~area~~ *initially certified for development.*

This pronounced rise, together with the sharp, well-like increase in elevation, has promoted development of a well-defined dendritic drainage pattern than to the south. Above the intermittent drainage ways are for the most part broadly undulating and gently sloping land sections generally well suited to irrigation, except south. The under-lying basalt outcrops occasionally on the higher points of rolling land and along the outer edge of the flatter lands lying in the drainageways; but only in the extreme western part do these outcroppings give rise to any significantly continuous areas of basaltized.

Northward from the sharp rise in elevation there is significantly higher lime accumulations in the sand with the substratum overlying the basalt bedrock than is common to most of the remainder of the Division. In this area the high permeability of the surface soil, together with the underlying creviced basalt and well-developed dendritic drainage-systems should prevent or alleviate any tendency to over-saturation which might arise from slow-up of the internal soil and underdrainage where lime cemented layers occur in the subsoil and substratum. In the vicinities of nearby Pavalton and don, land with similar topographic, soil and substratum characteristics are well drained and highly productive after mere one or two years under irrigation.

### Soils

The soils, as elsewhere on the Division, have developed from airborne and windblown material deposited to variable depth over uneven basaltic lava of unknown thickness. Like these soils they have light colored, yellow, permeable, silt; surface soils high in mineral nutrients but low in organic matter and nitrogen. Also, including the subsoils have a high lime content but the compaction and cementation for the most part is more generally and highly developed and often extends well into the substratum.

According to the 1925 Soil Survey Report of the United States Department of Agriculture most of the soils on this part of the upland plain are members of the Indiska series. Distinguished from the Portneuf soils, which are the dominant soils elsewhere in the Division, the Indiska soils are characterized as having less of the unconsolidated and substratum lime accumulations, that characterized Indiska in the form of



fractured but firmly cemented lime layers or plate-like sheets. There may be two or three of such layers separated by comparatively loose material. Below these layers the soil material is often compact and slightly cemented but soft as compared with the layers immediately above. The Portneuf soils they describe as deep loessial soils in which a very compact layer of subsoil lime concentration occurs, ranging from a few inches to one foot in thickness. However, here most of these rather inextensive Portneuf soils are the shallow phase in which basalt bedrock capped by a lime cemented layer is encountered within a depth of 3 feet. Other inextensive soils are the deep loessial stream modified so-called *Oryx* soils occurring along the ephemeral stream channels as elongated, narrow, flat areas.

As elsewhere on the Division, soils here vary considerably from place to place. Thus, in subsoil characteristics this range of variability is important in evaluating their economic value under irrigation, and as formerly in the detailed land classification soil groups were identified to distinguish these subsoil and substratum characteristics. However, in this more limited area only six (10, 30, 40, 50, 60, and 70) of the former eight soil groups were encountered and of these only four covered any significant acreage. These are groups 10, 30, 40, and 60 which, as formerly in the original survey, have in general the following described characteristics but with specific significant differences as noted.

#### Soils with no Root Restrictions in the Profile

Group 10.—Permeable soils which have limy nodular subsoils, and basalt bedrock at a depth of at least 54 inches but no restrictions to root growth within this minimum depth.

In this area the limiting depth is not necessarily to the basalt bedrock as deep borings indicate that the extensively developed lime hardpan layers may also underlie this group of soils before the basalt is encountered. This important deep permeable soil which occupies about one-fifth of the area classified has the following profile characteristics.

The surface soil of mellow silt loam ranges from 8 to 20 inches in depth but averages about 16 inches and is usually noncalcareous. Below this is a highly calcareous subsoil about two feet thick. A loose floury silt loam or very fine sandy loam commonly lies under the highly calcareous zone ranging downward to variable depths below five feet. Varying degrees of compaction may occur throughout the profile, which may range from slight compaction to mild cementation. The zone of lime accumulation is nodular in places and in some cases more or less platy. Locally this lime zone may restrict downward root development but such layers usually soften and become penetrable when wet.



The mellow, friable silt loam upper horizon and the very fine sandy loam deeper zones are very permeable to water and even the higher lime developments do not significantly retard percolating waters.

#### Soils with Root Restrictions in the Profile

The remainder of the soils have restricting limy layers or zones which vary from those with considerable compaction to those definitely indurated. The surface soils are very similar to those of the former soils, but in the subsoils and substrata such concentrated lime developments may more or less restrict roots. However, it appears that with the exception of the deeper and more highly cemented layers, roots have a tendency to work down through the fractures to a considerable extent. These layers soften under irrigation and are quite permeable.

Group 30.--Soils of this group have very compacted or weakly cemented nodular or platy subsoils which restrict root growth somewhat but the understrata is penetrable.

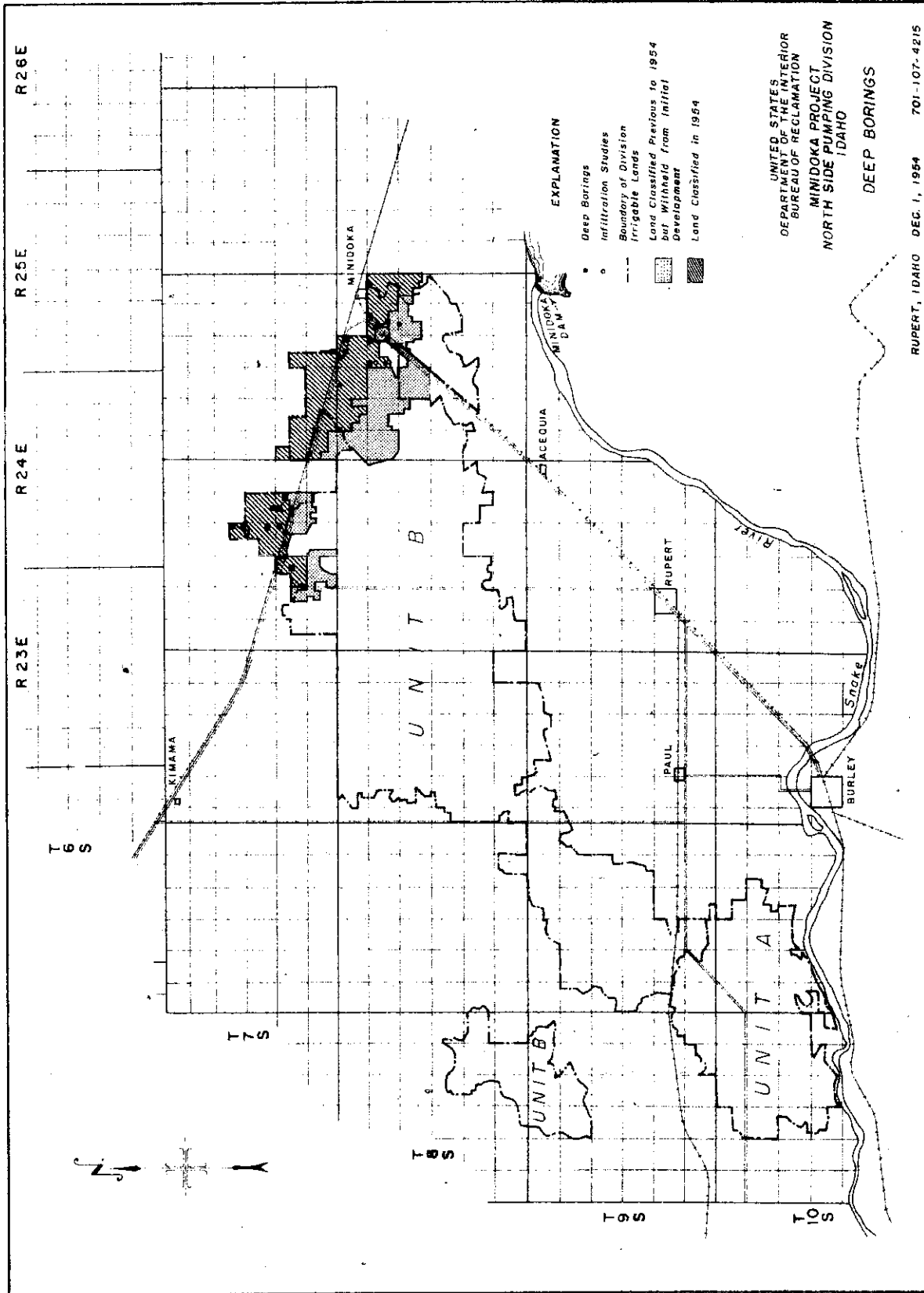
About one-fifth of the area classified in this survey belong to this group of soils. However, only in a very small area are these soils similar to those previously mapped, most of them belonging to a new subgroup described as follows:

Subgroup 330 - Soils of this subgroup have subsoils with a series of compacted limy layers with a very thin cappings of shell-like indurations. These cappings are fractured and though downward root development is restricted, roots penetrate the fractures somewhat. At deeper depths the roots are likely to be stopped by a more strongly developed capping. Where the cappings can be reached by subsoiling the soil can be improved for root penetration. The fractured nature of the cemented cappings of lime layers permits downward water movement and as observed on other projects these soften under irrigation.

Group 40 - Soils of this group have subsoils with a thin lime cemented caliche-like layer within a depth of 36 inches. This layer restricts root development but with subsoiling significant improvement would result as the soil above and below this layer is penetrable.

This soil which occupies nearly one-fourth of the area classified is very similar to those occurring in the original area surveyed.

Group 60 - In the area covered in the previous survey these soils have a lime cemented indurated (caliche) subsoil development which is definitely impenetrable to roots. For the most part in the present survey, the lime hardpan is fractured and is delineated as the following subgroups.



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Subgroup 620.--The soils of this subgroup have a fractured indurated caliche hardpan which is permeable to water and the roots penetrate downward through the fractures. This soil does not lend itself to subsoiling very well but with fractures for water and root penetration the caliche development is not as limiting as an impenetrable hardpan.

About one-fifth of the soils of the present survey belong to this subgroup.

The remainder of the soils which belong to Groups 50 and 70 are very inextensive and unimportant in this latter survey. These two groups of soils have the same characteristics as in the original survey.

#### Physical and Chemical Properties of Representative Soil Profiles

Soil samples for laboratory analyses were collected from four deep borings made in four widely separated representative locations as shown on map following page 7. These soils are described below, and in tables 1 and 2, these analyses are shown. The chart following page 10 shows the moisture tension curve for one of these profiles. 7

The mechanical analyses of these deep profiles, as shown in table 1, indicate the silty character of the soils and substratum, which is indicative of their loessial origin. However, in profiles 1 and 2 from the west portion of the area the clay content is much higher in the lower part as compared with the top part, whereas, in profiles 3 and 4 the clay content is considerably lower in the lower layers. The textural differences in these soils, however, apparently are not as significant as the soil structure and lime accumulation indicated in the soil descriptions which are factors that more directly affect plant growth in relation to fertility, root penetration, and permeability to water.

High lime in the subsoil and substratum is indicated by the field profile description and the laboratory analyses with the most notable increase (table 2) generally in the lower subsoil and upper substratum. These zones of high lime concentrations whether cemented or not have the highest pH values in the profile. These pH values, common to high lime concentrations in this general region, increase on dilution but with leaching are shown to decrease for the most part with the leaching out of the salt which also appears to be satisfactorily accomplished. Exchangeable sodium which is only seriously concentrated in the lower parts of the substrata of 3 and 4 show a marked reduction and reach a satisfactory level in all samples except those from the lower substrata of profile 3. With prolonged leaching, such as would occur with

# PROFILE DESCRIPTIONS OF DEEP BORINGS

## Hole No. 1 - Class 1; Soil Group 10; Subgroup 124

Sec. 28, T. 7 S., R. 24 E. At 16 1/4 Cor.

0" - 32" - Silt loam  
 32" - 55" - Nodular compacted very fine sandy loam  
 55" - 84" - Compact very fine sandy loam  
 84" - 100" - Loam to light clay loam, with dark nodules  
 100" - 120" - Loam  
 120" - 140" - Loam (moist)  
 140" - 165" - Light clay loam to clay loam  
 165" - 216" - Loam  
 18' - 24'6" - Loam - lime capping at 24'6"  
 24'6" - 25'6" - Loam to light clay loam. Broken basalt at 25'6".

## Hole No. 2 - Class 1; Soil Group 10; Subgroup 124

Sec. 23, T. 7S., R. 24 E. At 5-1/4 Cor.

0" - 12" - Silt loam  
 12" - 40" - Nodular silt loam  
 40" - 60" - Floury silt loam  
 60" - 108" - Silt loam  
 108" - 126" - Blocky heavy silt loam  
 126" - 168" - Loam  
 168" - 216" - Nodular highly compacted silt loam to light clay loam  
 18' - 27' - Light clay loam to clay loam (Small pea size basalt chunks last three feet)

## Hole No. 3 - Class 3; Soil Group 10; Subgroup 124

660'S. of N-1/4 Cor., Sec. 4, T. 8 S., R. 25 E.

0" - 12" - Silt loam  
 12" - 36" - Nodular silt loam  
 36" - 60" - Very fine sandy loam  
 5' - 8' - Light clay loam  
 8' - 10-1/2' - Loam - compacted zone with caps. Basalt rock at 10.5'. Some lime coating on basalt crevices.

TABLE 2  
MECHANICAL ANALYSES OF SOIL SEPARATES

PERCENT OF EACH PARTICLE SIZE									
At State Pumping Division									
Depth inches	Clay	Silt	V.F.S.	F.S.	M.S.	C.S.	F.G.	November 1924	
								Texture	
32	12.0	50.0	74.5	3.0	0.0	0.0	0.0	Silt loam	
28	10.5	50.5	80.0	1.0	0.0	0.0	0.0	Silt loam	
24	12.0	41.0	82.5	8.0	4.0	0.0	0.0	Silt loam	
100	12.0	53.5	86.0	7.0	2.5	0.0	0.0	Silt loam	
100	11.0	53.5	85.5	4.0	2.0	0.0	0.0	Silt loam	
100	22.5	52.0	81.5	1.0	0.0	0.0	0.0	Silt loam	
100	27.0	51.0	81.0	0.5	0.5	0.0	0.0	Heavy silt loam	
210	18.5	52.5	85.0	0.0	1.0	0.0	0.0	Silt loam	
24-26	24.0	51.0	17.0	7.0	1.0	0.0	0.0	Silt loam	
25-27	21.0	52.0	20.0	3.0	1.0	1.0	0.0	Silt loam	
32	17.0	55.0	24.0	5.0	0.0	0.0	0.0	Silt loam	
36	19.5	54.5	23.0	0.5	0.0	0.0	0.0	Silt loam	
36	13.5	57.5	23.0	2.5	0.0	0.0	0.0	Silt loam	
100	11.0	56.5	23.5	0.5	0.0	0.0	0.0	Silt loam	
100	24.0	50.0	16.5	1.0	0.0	0.0	0.0	Heavy silt loam	
113	27.0	53.0	16.0	0.5	1.0	0.0	0.0	Silt loam	
212	24.5	55.0	17.5	2.0	1.0	0.0	0.0	Silt loam	
27	24.0	51.0	19.0	2.0	1.0	0.0	0.0	Silt loam	
112	17.5	47.0	25.5	2.5	1.5	0.0	0.0	Loam	
120	11.5	50.5	27.0	21.0	3.5	0.0	0.0	Loam	
130	9.5	47.0	31.5	0.5	2.5	0.0	0.0	Loam	
131	9.0	55.5	28.5	0.0	0.0	0.0	0.0	Silt loam	
130-141	10.0	44.0	31.0	1.0	3.5	1.0	0.0	Loam	
112	18.5	43.5	29.0	3.0	1.0	0.0	0.0	Loam	
136	15.0	51.5	22.5	4.0	1.5	0.0	0.0	Silt loam	
141/2	7.0	52.0	23.0	7.0	1.0	0.0	0.0	Silt loam	
142-143	5.0	53.5	23.5	6.0	0.0	0.0	0.0	Silt loam	
17.5	7.0	60.0	30.5	0.5	0.0	0.0	0.0	Silt loam	



Hole No. 4 - Class 2s Soil, Subgroup 33<sup>4</sup>

Sec. 14, T. 8 S., R. 25 E. At 16/11 Cor.

- 0" - 12" - Silt loam
- 12" - 36" - Silt loam - nodular compaction
- 36" - 66" - Series of thin caliche layers in loose floury silt loam.
- 5'6" - 11' - Nodular compacted loam. White mottling throughout this zone.
- 11' - 17'8" - Loam. Some nodules and compaction.

Water Holding Capacities of Typical Soils

The moisture tension curve and accompanying data (following page 10)<sup>7</sup> like those in the original Land Appendix of 1952 show that the soils in the supplemental area have similar high moisture holding capacities. This is in excess of 2 inches available water per foot of soil.

Along with the leaching experiment on a simulated disturbed profile core (Hole 3 table 2) moisture retention and available moisture were also determined with results as shown below.

<u>Horizon</u>	<u>Disturbed</u>	<u>15 Atmosphere</u>	<u>Available Moisture</u>	
	<u>Core - Field</u>	<u>Moisture</u>		
<u>Inches</u>	<u>Capacity</u>	<u>Retention</u>	<u>In./Ft.</u>	<u>In./</u>
	<u>In./Ft.</u>	<u>In./Ft.</u>		<u>Horizon</u>
0-12	3.42	1.20	2.22	2.22
12-36	4.12	1.21	2.91	5.82
36-60	4.15	1.08	3.07	6.14
60-96	4.63	1.50	3.13	9.39
96-126	4.75	1.22	3.53	8.82

Topography

The topography in this part of the Division is generally well suited to irrigation farming. However, in being more completely traversed by drainageways than the area to the south at the lower elevations there is a general absence of large, smooth, gently sloping or gently undulating areas that characterize that area. Instead the land in general is more strongly undulating with occasional higher rising rolling areas between drainageways. The smoother more gently sloping areas occupy the wider

100

Moisture Tension Curve  
 Minidoka N.S.P.D., Idaho  
 Hole No. 3 - 660' S. of N-1/4 Cor.,  
 Sec. 4, T. 8 S., R. 25 E.

Legend

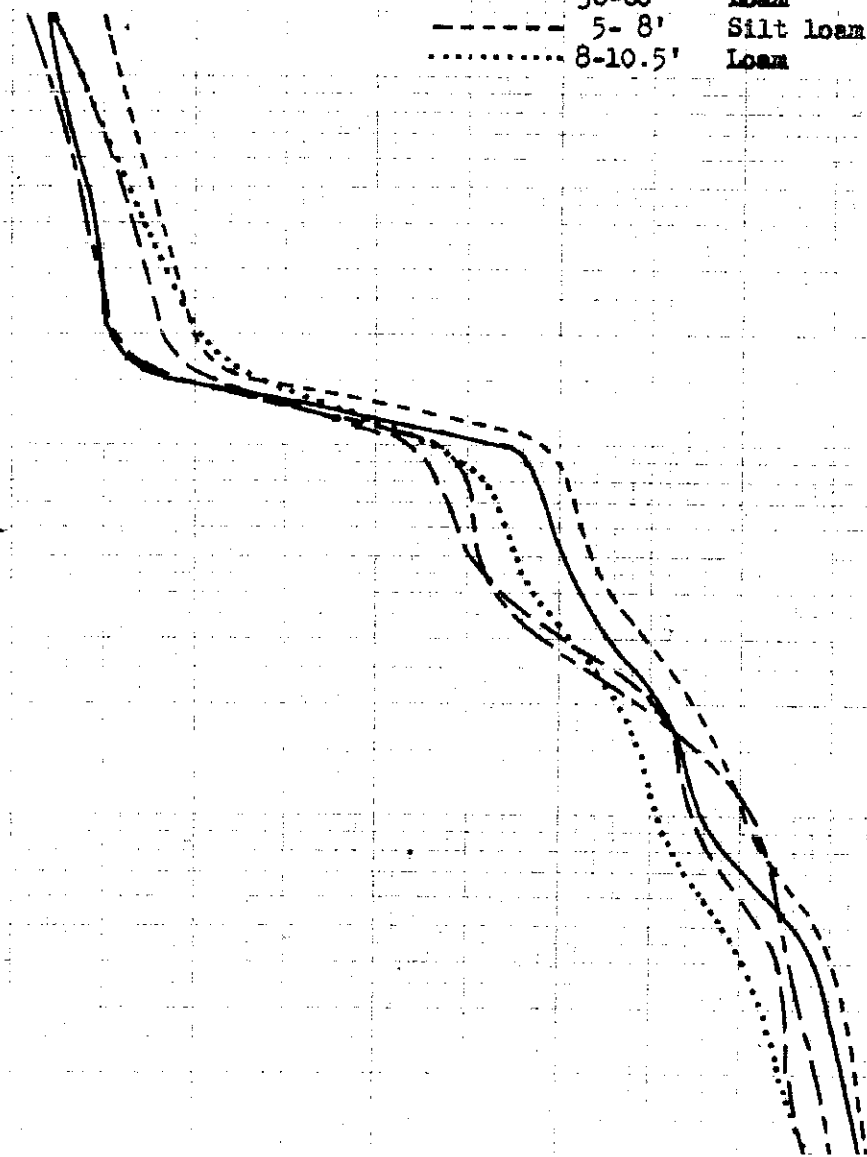
Depth	Texture	App. Sp. G.
0-12"	Loam	1.16
12-36"	Loam	1.30
36-60"	Loam	1.26
5- 8'	Silt loam	1.17
8-10.5'	Loam	1.12

Tension in Atmospheres

10

1

0.1







### Drainage

Most of the lands in this latter survey have favorable topography for surface drainage and adequate drainage outlets for runoff are provided by the dendritic drainage system. There are few if any extensive flat areas or closed basins, but locally where there are flat wide areas along drainageways of low gradient, the channels may have to be deepened to provide adequate capacity for free flow where water might accumulate.

With these favorable topographic conditions and the necessity for rigid economy in use of water, it does not appear likely that the soils will become oversaturated even though in probably half of the area the downward movement of water may not be as free as elsewhere because of lime cemented layers in the subsoil and substratum. Near Eden and Hamilton there are extensive areas with similar topography and soils with similar subsoils and substrata where irrigation has been practiced for over 40 years without any evidence of waterlogging or salt accumulation except perhaps very locally in drainageways.

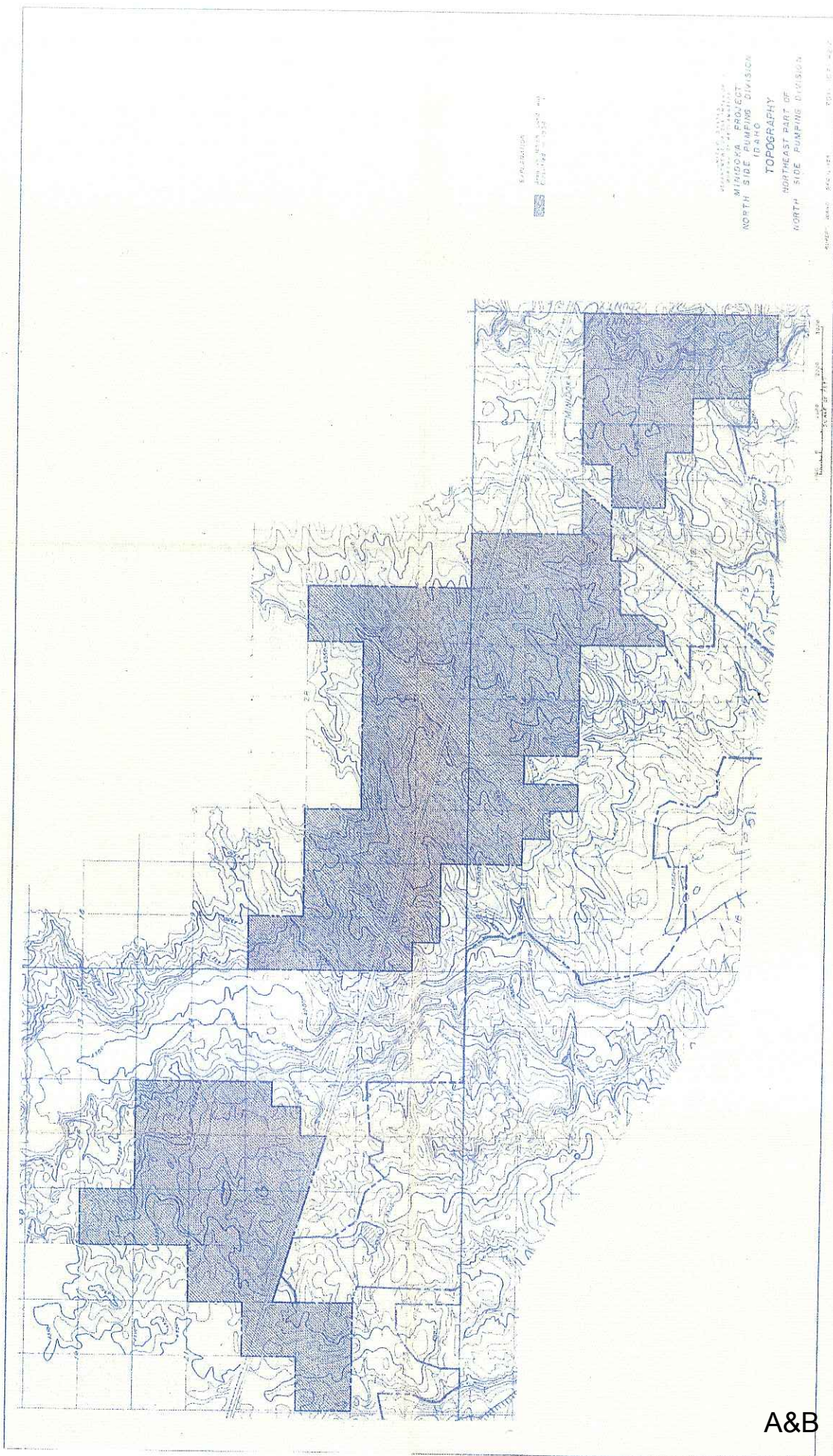
The reason that internal downward movement of water is not seriously restricted is probably largely due to the fractured nature of the very compact or cemented plates, layers and zones usually lying over or bedded with thick layers of loose floury silt and very fine sand. Even where these cemented layers directly overlie the basalt bedrock, the extremely fractured creviced nature of the lava flows with large pressure cracks and cooling joints should preclude the development of a perched water table.

### Permeability Tests

As formerly, during the progress of the field operations infiltration rates and the permeabilities on representative soils were determined in a number of locations (see map following page 7) by the use of cylinders. These were placed on the soil in pairs, and after applying water, recordings were made periodically to determine the rate of infiltration into the soil. The infiltration rate was determined on the dry soil for about 6 hours and then for about 6 hours after the soil had become wet. After 48 hours holes were excavated to trace the extent of the wetted pattern. The 12 charts following page 12 show the wetted pattern as well as the rate of water movement into both the dry and the wet soil. The accumulated amount applied to the soil in the dry and the wet condition is also shown.

The cylinders in Sections 15, 22, and 27 of Township 7 South Range 24 East were on soils of the 40 Group.







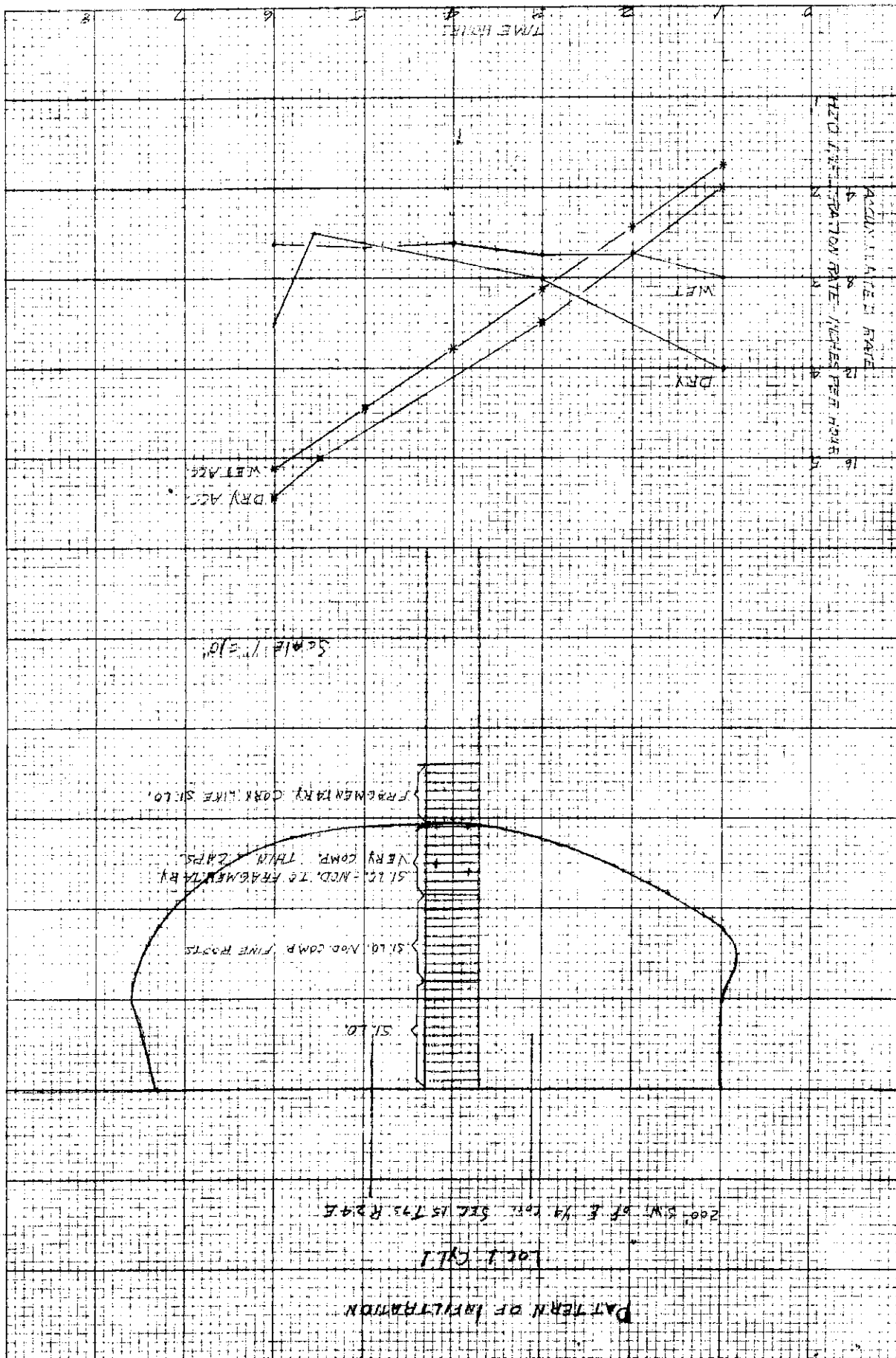
lime subsoil water appears to penetrate downward without being appreciably retarded. This is apparently due to the fragmentary and fractured character of these subsoil and substrata developments. However, there are some variations indicated in the extent to which the water penetrated the cemented layer during the 6-hour period. This is due to the considerable difference in development of the lime zone from place to place. With prolonged application the penetration no doubt would have continued as the laboratory data on the deep profiles indicates that though water movement is slowed down in the lower subsoils and deeper substrata, percolation is adequate for internal drainage if no obstructing layer or solid basalt bedrock is encountered. Since indications are that the basalt is creviced in this area, problems probably will not arise from this cause. Nevertheless, with this as a possibility locally, overirrigation or the continuous running of water in farm ditches should be guarded against even though for the most part the topography is favorable for satisfactory runoff of excess water in areas where high lime developments occur.

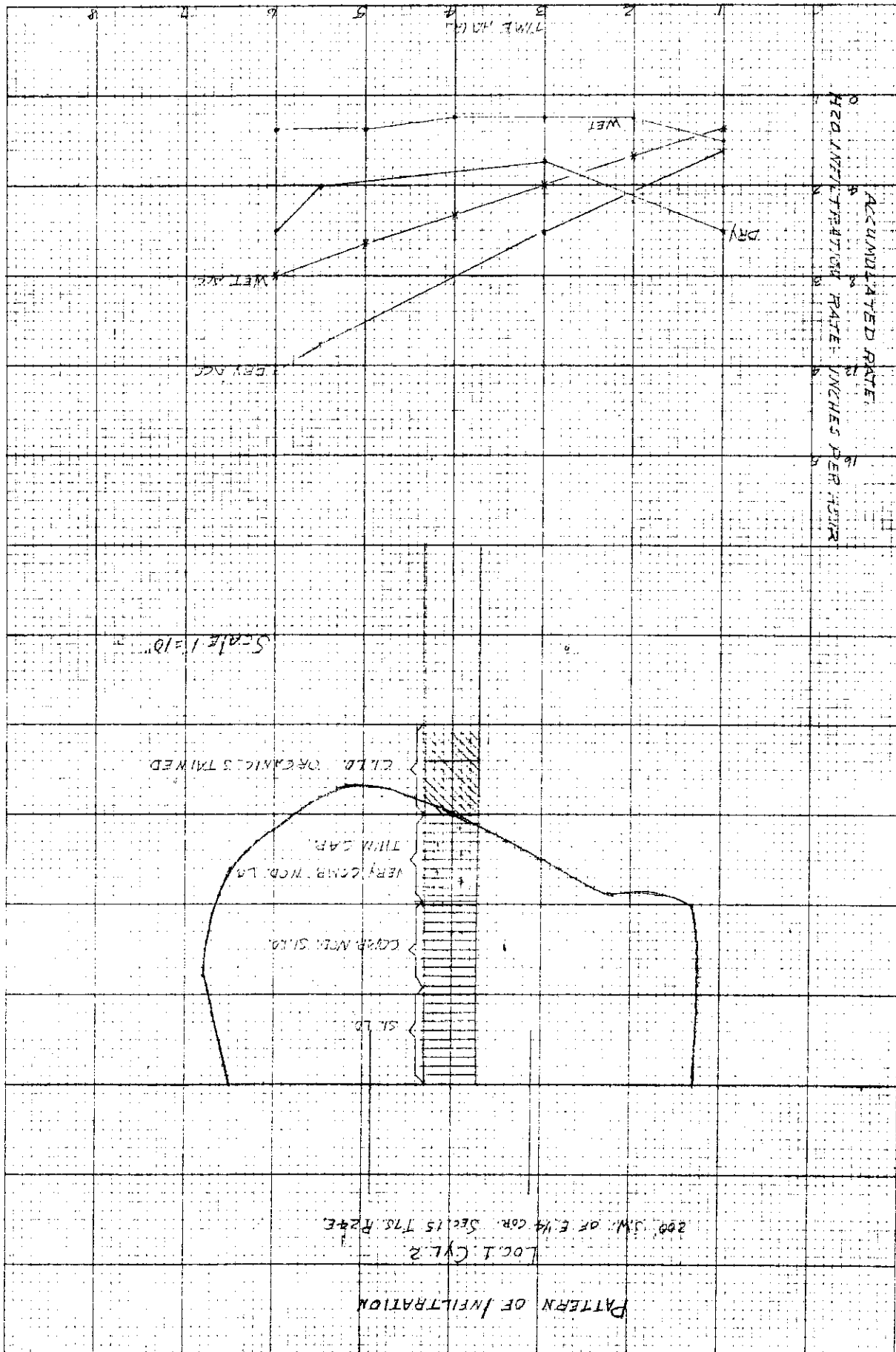
#### Saline and Alkali Soils

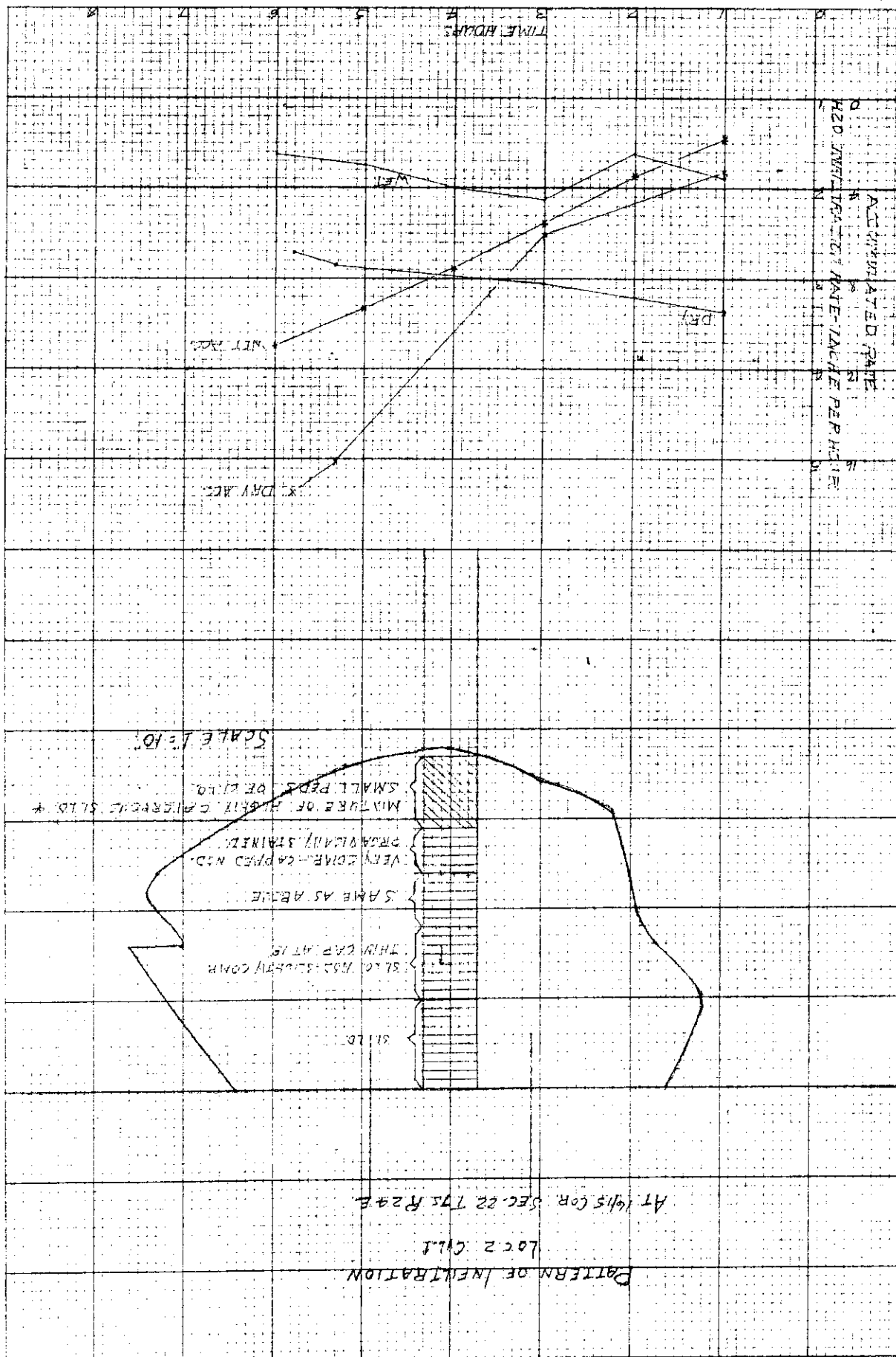
Except for occasional "slick spots" which are fewer than in much of the area to the south of this recently classified 8,400 acres, there is no surface evidence of saline or alkali soils. However, during the progress of field classification, salt and reaction were determined on all soils sampled. This sampling which was to a depth of about 5 feet revealed that though salt concentrations are extremely variable and not generally common to continuous areas in somewhat over half the samples salt occurred in slight to moderate concentration in the subsoil. This salt occurred largely in the soils with lime cemented layers, plates, or zones in the subsoils and substrata. This concentration of salt in lime cemented layers is not uncommon and can be expected where such developments occur.

For the most part no combination of salinity and high pH appeared to be naturally occurring but on most samples the pH increased on dilution, which is characteristic of high lime subsoil developments and not necessarily significant in crop production except where the alkalinity persists or rises in the profile when the land is irrigated. In only a very few cases, however, was the increase greater than can be expected in this general area of high lime subsoils and substrata.

Here, as elsewhere on the Division, the deeper substratum even where not cemented may be slightly to moderately saline and contain variable amounts of exchangeable sodium. Because of the creviced and fractured nature of the underlying basalt, however, it is expected that both salt



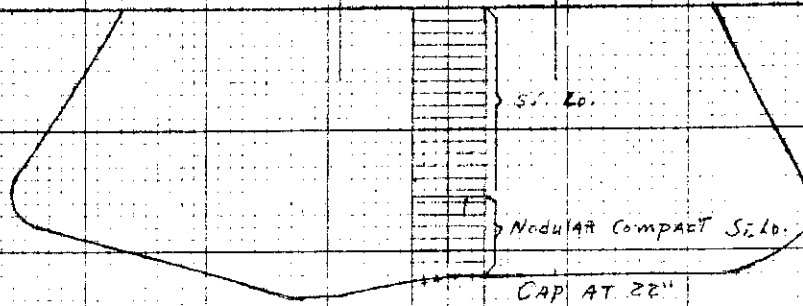




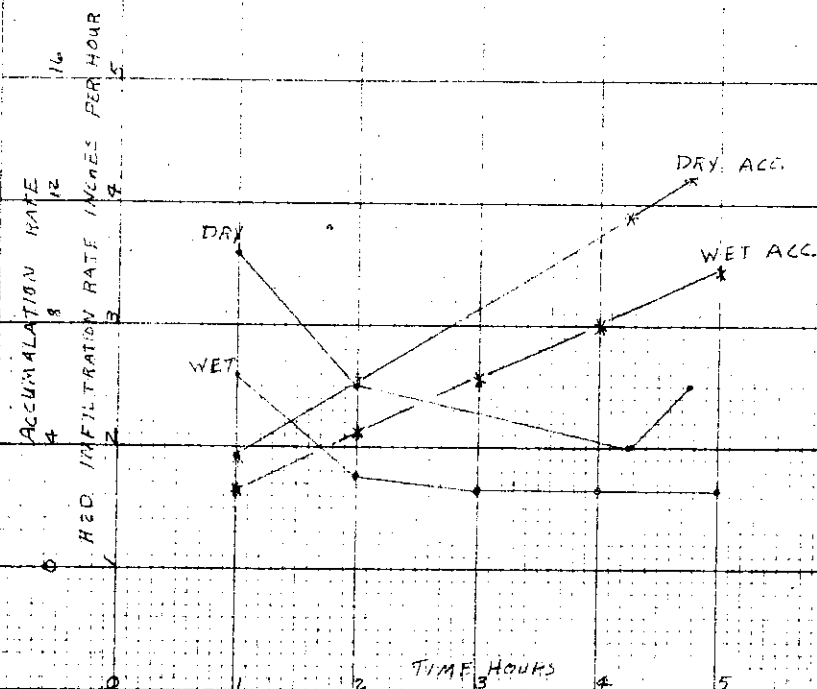
# PATTERN OF INFILTRATION

LOG. 3 Cyl. 1.

16/1 Coy Sec 27 T7S R24E



SCALE 1"=10'

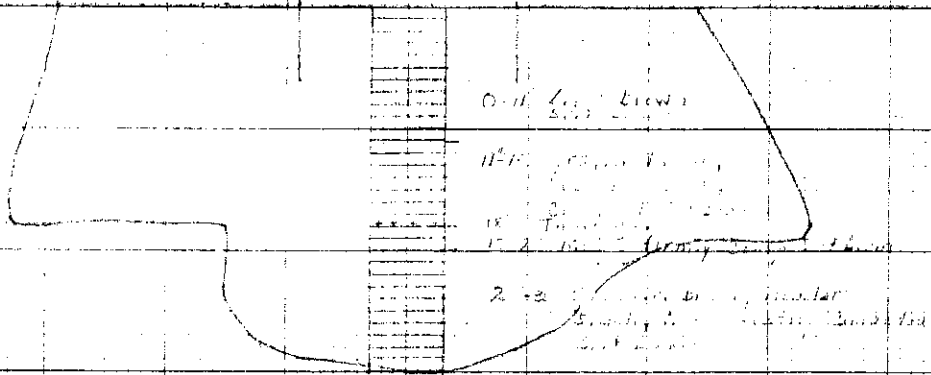




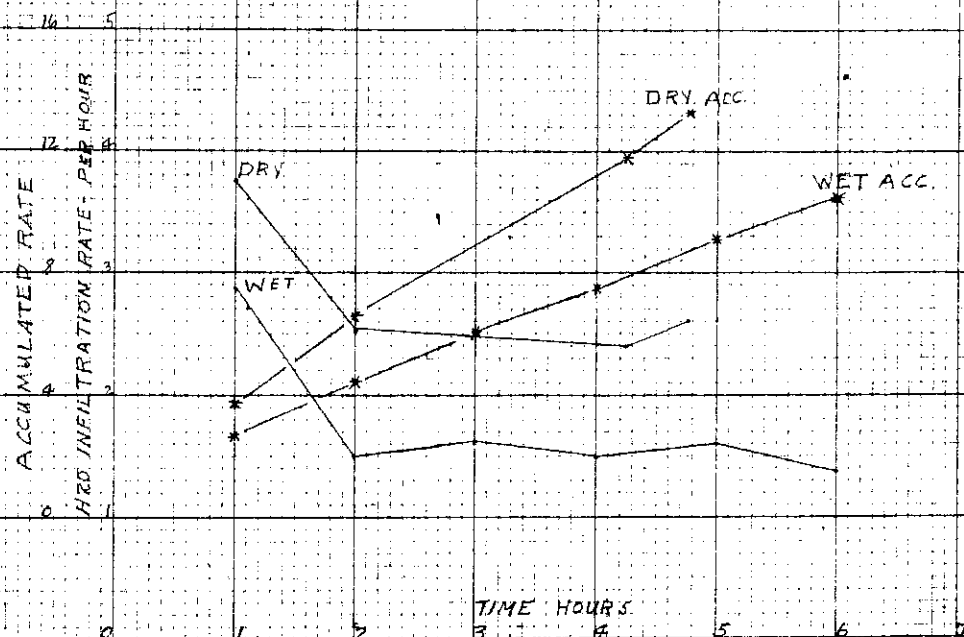
# PATTERN OF INFILTRATION

Loc. 3 Cyl. 2

161 Cor. Sec 27 T. 75 R. 24E

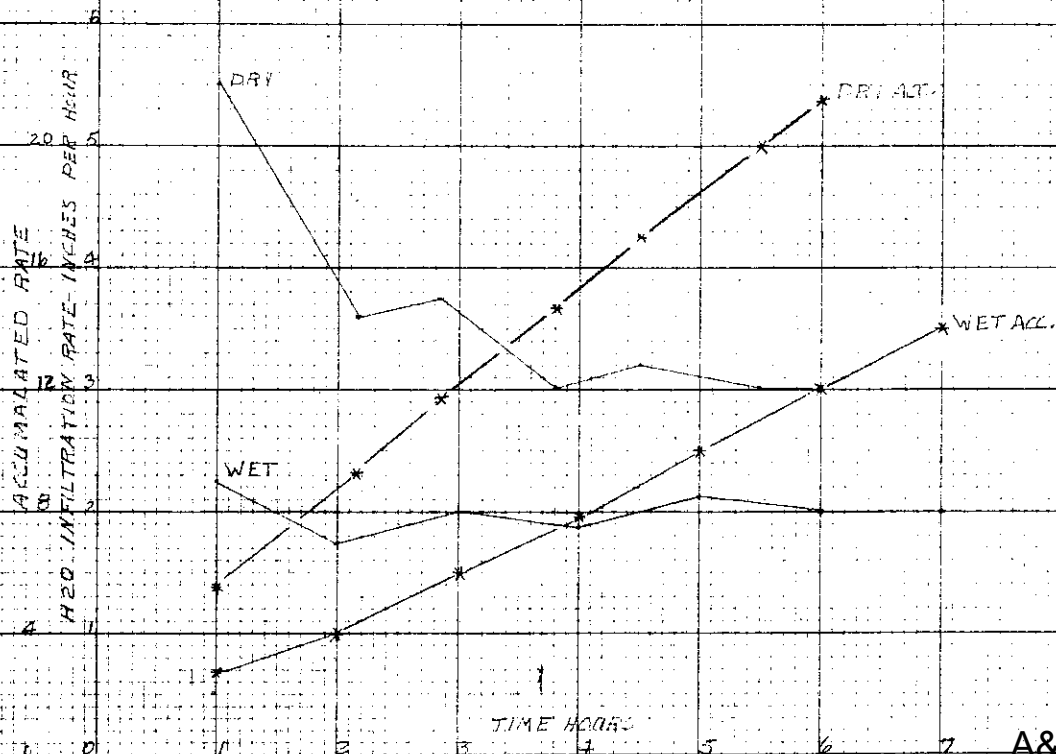
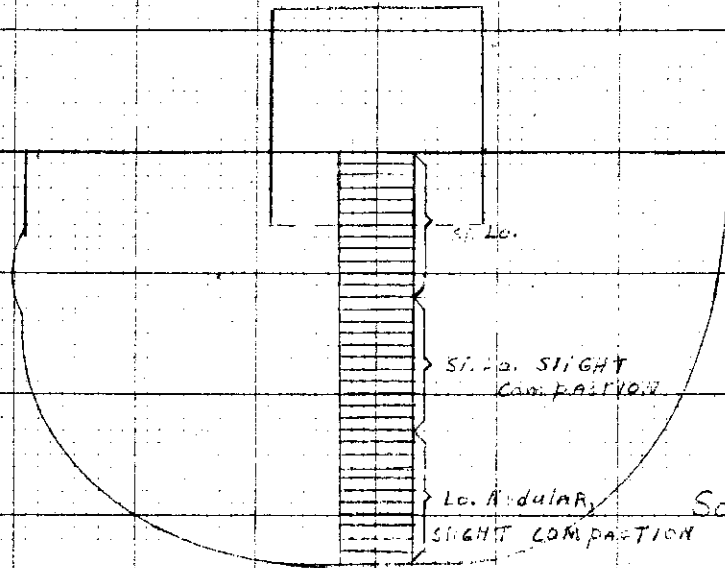


SCALE 1" = 10'



# PATTERN OF INFILTRATION

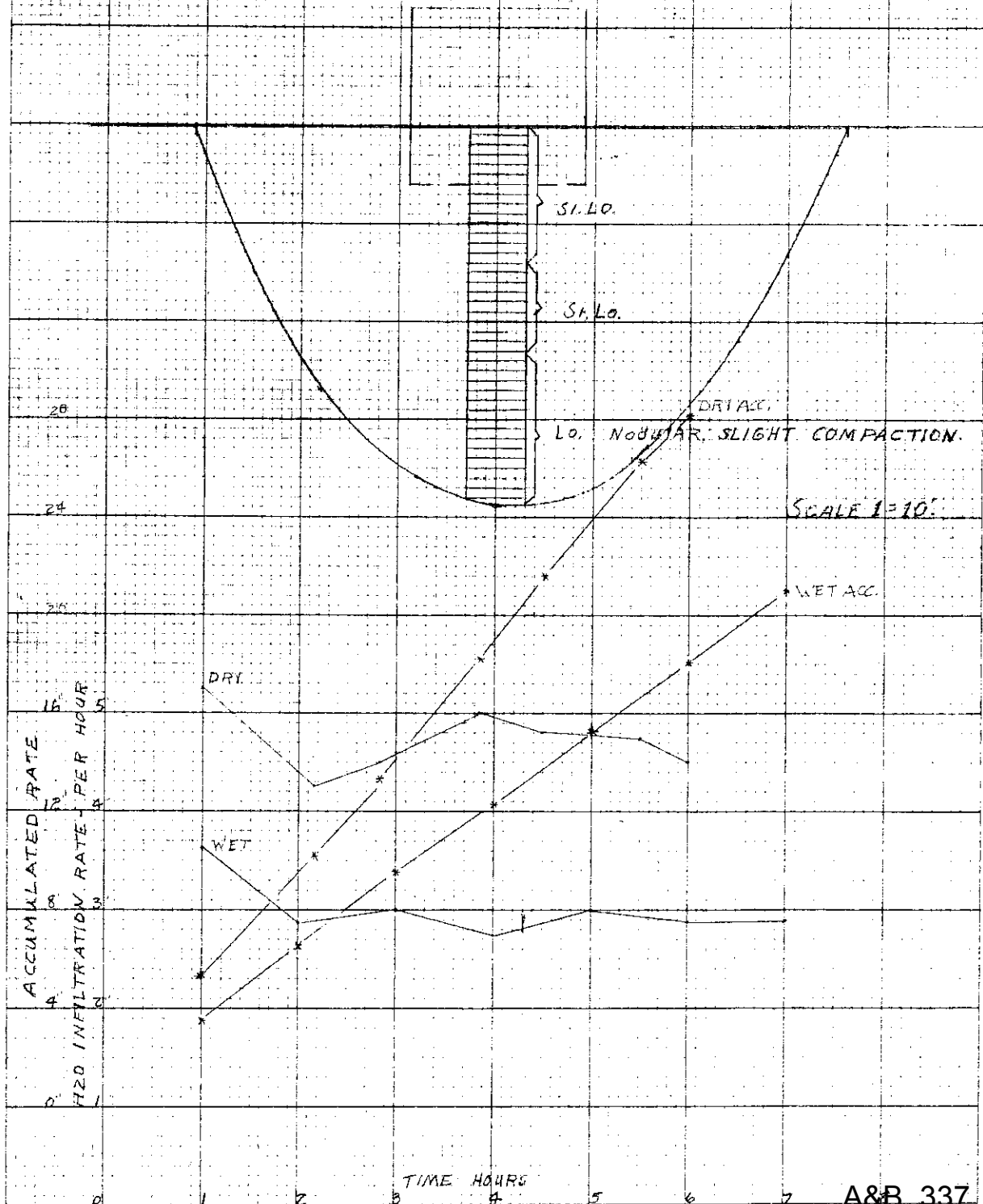
LOC. # CYL. 1  
AT 145 COR SEC 10 T8S R25E



# PATTERN OF INFILTRATION

LOG. 4 Cyl. 2

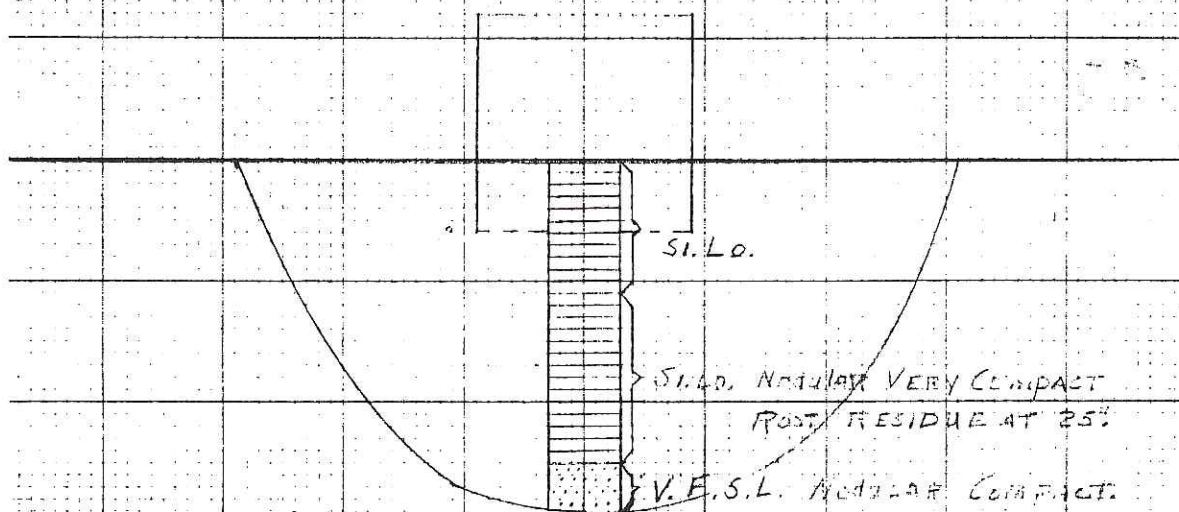
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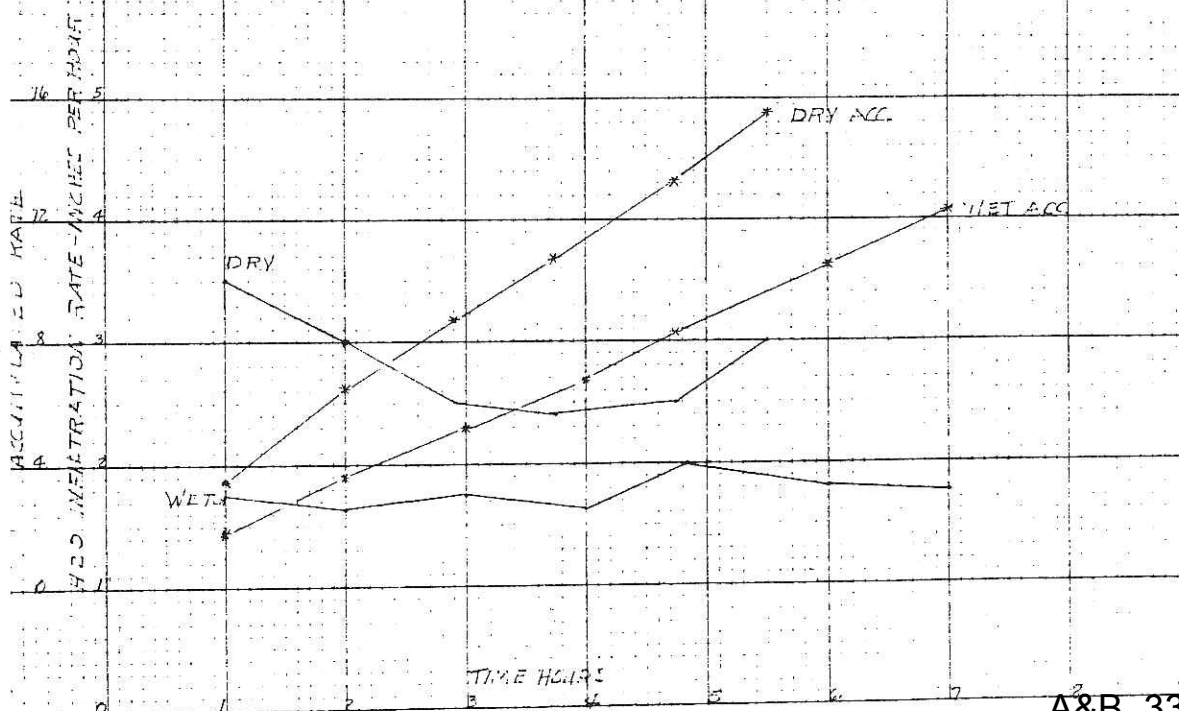
# PATTERN OF INFILTRATION

LOC. 5 Cyl. 1

At 16 1/2 COR. SEC. 10 T8S R25E



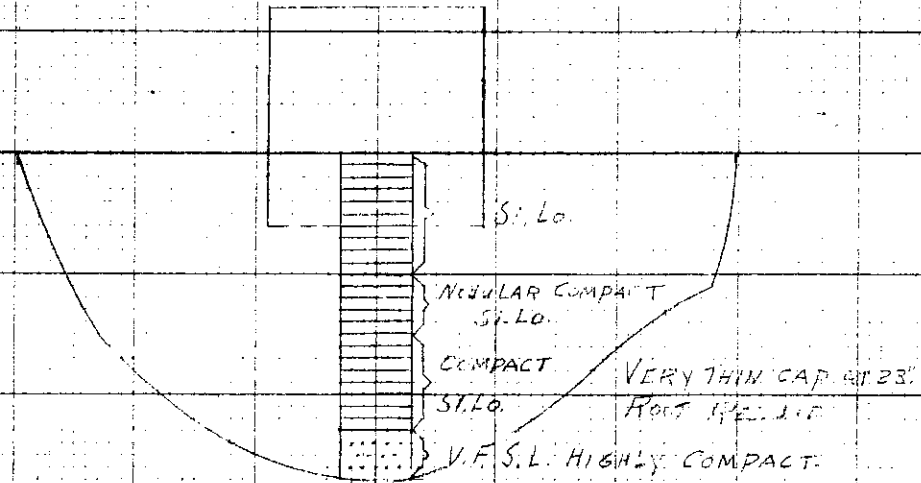
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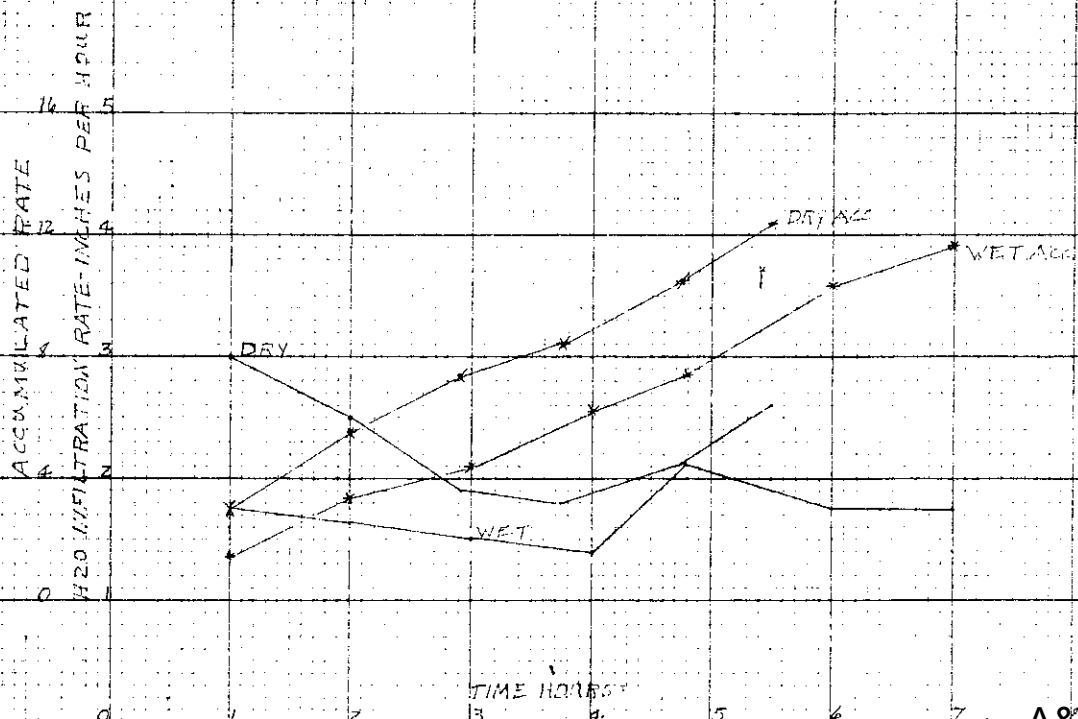
# PATTERN OF INFILTRATION

LCC.5 Cyl. 2

AT 14/11 COR. SECT. 10 7 BS. 17.25E



SCALE 1"=10'

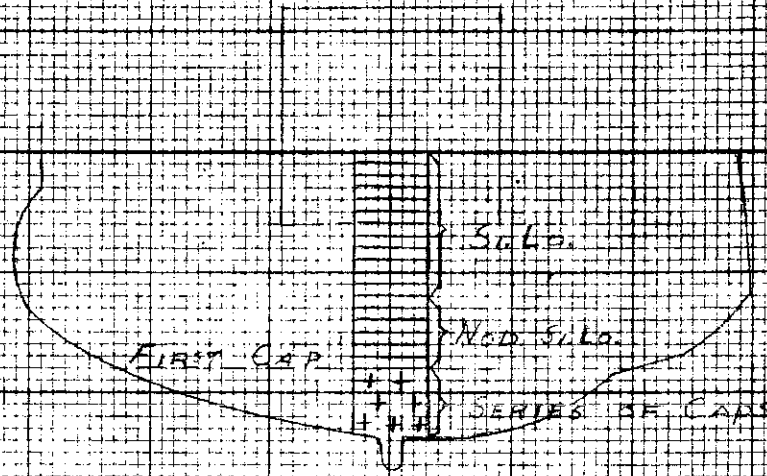




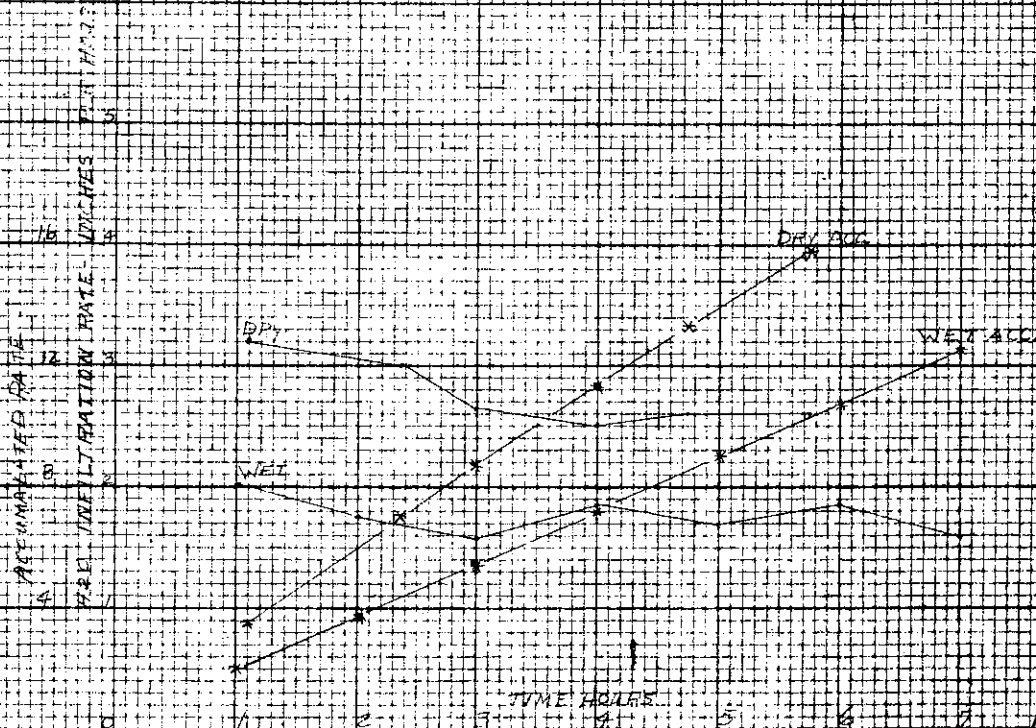
# PATTERN OF INFILTRATION

LOU'S CYL 1

150' S. OF 1/4 COR. SEC. 10 T. 35 N. R. 75 E.



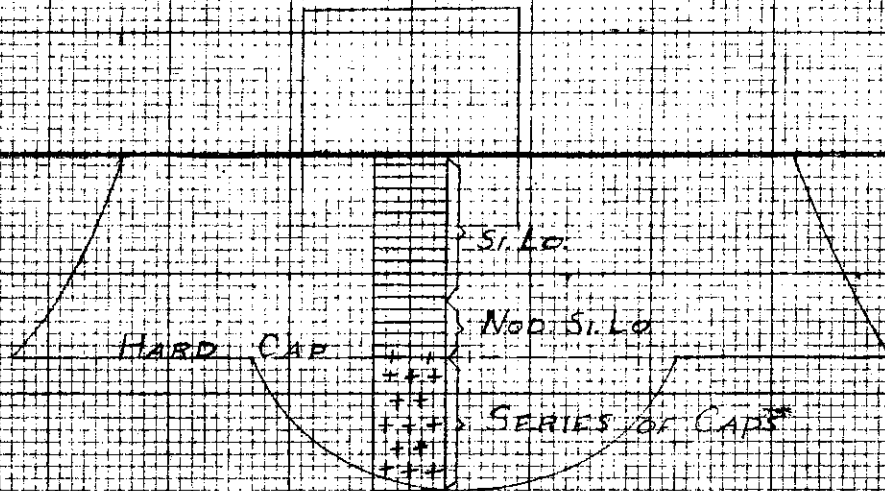
SCALE 1" = 10'



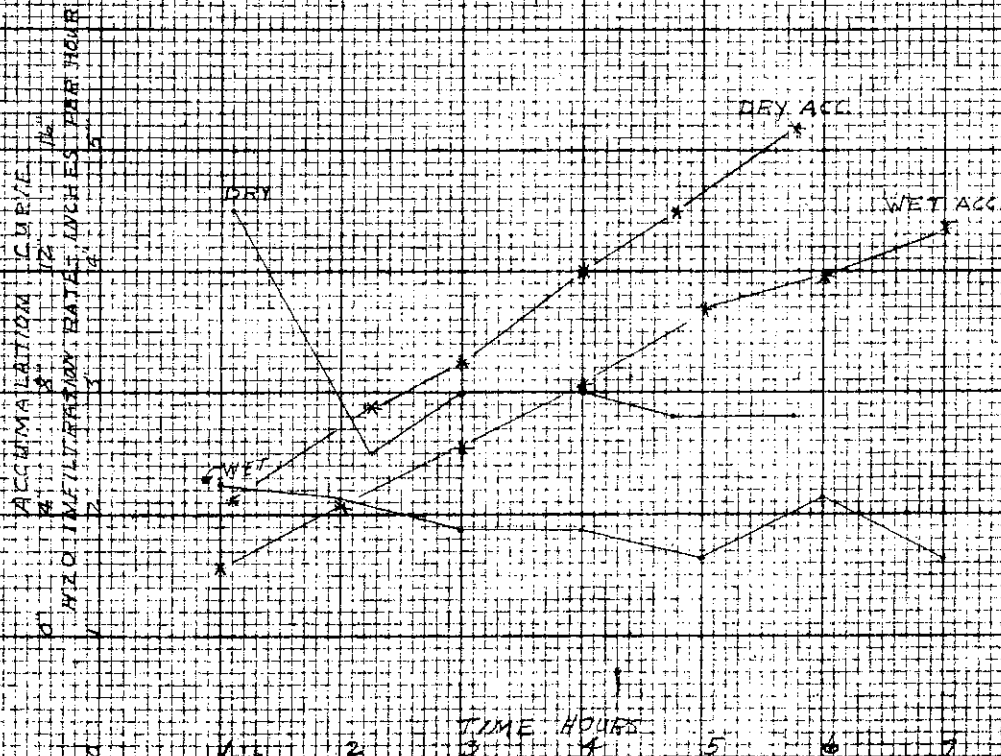
# PATTERN OF INFILTRATION

LOC 6 Cyl 2

150'S. OF 1416 CAP. SERVO T85 R25E



SCALE 1"=10'



saturation or waterlogging of such soils could give rise to a salt problem by creating continuously wet conditions which promote surface salt concentrations rather than leaching. With the necessity of rigid economy of water and the general favorable topography for surface runoff, it should be possible to hold oversaturation or waterlogging to a minimum.

## LAND CLASSIFICATION

The lands in this area were classified by use of the same standards as elsewhere on the Division. The evaluation of the lands for irrigation were by an integrated analysis of both physical and economic factors as applicable to these lands and as confirmed by actual experience on adjacent developed projects with similar lands.

The areas on nearby projects originally selected as correlation areas were the following:

1. An area immediately east of Twin Falls, Idaho having comparable high quality Class 1 lands as those on the North Side Pumping Division.
2. An area in the vicinity of Buhl, Idaho with lower quality lands due to shallower soils than in the Twin Falls area.
3. An area east of Hazelton, Idaho where the lands are of only medium quality because of compact to cemented subsoils and substrata.

Only about one-fifth of the soils of 8,400 acres recently classified have lands with soils and topography similar to the first correlation area. Those of the second area are only represented to a limited extent but the lands of the third are comparable to about three-fourths of those of the area recently surveyed.

### Classification Specifications

Minimum specifications were the same as formerly set up for soils, topography, and drainage following the correlation of these physical conditions with similar conditions in adjacent irrigated areas. Basically, these specifications (table 4) follow closely the general overall specifications set up from past experience of the Bureau of Reclamation.

In the field, land classification areas regarded as arable, were separated from those considered nonarable, and, in turn the arable lands were separated into classes. About 88 percent of lands classified in this survey are arable. The various land classes were as follows:

#### Class 1

Soils of class 1 lands are deep, permeable and medium-textured, without restrictions to root growth. Surface soils are generally more than 14 inches deep over a slightly compacted calcareous subsoil. All soils are at least 54 inches deep over creviced basalt, but most are much greater in depth. They occupy gently sloping smooth uplands and broader depressional areas along drainageways. The lands may range up to 3 percent in general gradient but the slopes commonly are one-half to two percent. The soils are free from harmful accumulations of salts and have no drainage problems.





TABLE 2

## MINIMUM LAND CLASSIFICATION SPECIFICATIONS

North Side Pumping Division  
Minidoka Project, Idaho

Land Characteristics	Class 1 "Arable"	Class 2 "Arable"	Class 3 "Arable"	Class 4P "Limited Arable"
SOILS				
Texture	Sandy loam to friable clay loam	Loamy sand to very permeable clay	Loamy sand to permeable clay	Loamy sand to permeable clay
Depth: To sand, gravel or cobble.	36" plus--good free working soil of fine sandy loam or heavier or 42" of sandy loam.	24" plus--good free working soil of fine sandy loam or heavier or 30"-36" of sandy loam to loamy sand	16" plus--good free working soil of fine sandy loam or heavier or 24"-30" of lighter textured soils.	
To creviced basalt or indurated nodular or silty platy, cemented hardpan. (Im-permeable to roots, but slightly permeable to water.)	54" plus	42" plus	30" plus	24" plus
To impervious in-durated caliche hardpan.	60" plus	40" plus	36" plus	24" plus
To highly calcare-ous very compact semi permeable hardpan.	60" plus	36" plus	24" plus	12" plus
To penetrable lime zone.	14" plus with 54" penetrable			
Alkalinity $\frac{2}{}$	pH not to exceed 8.6	pH not to exceed 9.0	pH not to exceed 9.0 unless soil is cal-careous; total salts are low.	pH not to exceed 9.0
Salinity $\frac{1}{}$	Total salts not to exceed 0.2%	Total salts not to exceed 0.3%	Total salts not to exceed 0.5%. May be higher in open perme-able soils and under good drainage condi-tion.	If salt content exceeds 0.5%, must be under conditions where it can be con-trolled.
TOPOGRAPHY				
Slopes	Smooth slopes up to 3% in general gradi-ent in reasonably large bodies sloping in the same general plane.	Smooth slopes up to 7% in general gradi-ent in reasonably large bodies sloping in the same plane; or rougher slopes which are less than 3% in general gradient.	Smooth slopes up to 12% in general gradi-ent in reasonably large sized bodies sloping in the same plane; or rougher slopes which are less than 7% in general gradient.	Smooth slopes up to 18% in general gradient in reason-ably large sized bodies; or rougher slopes which are less than 12% in general gradient.
Surface	Even enough to require only small amount of leveling and no heavy grading.	Moderate grading re-quired, but in amounts found feasible at reasonable cost in comparable areas.	Heavy and expensive leveling required in spots, but in amounts found feasible in com-parable irrigated areas.	Surface condition such that crop adaptability is very limited and management problems would be very complex.
Cover (loose rocks and vegetation)	None	Insufficient to modify productivity or cultural prac-tices; or clearing costs small.	Sufficient to reduce productivity and in-terfer with cultural practices. Clearing required but at mod-erate costs.	Present in suf-ficient amounts to cause specific limited crop adaptability.
DRAINAGE				
Soil and topography	Soil and topographic conditions such that no specific farm drainage requirement is anticipated.	Soil and topographic conditions such that some farm drainage may be required and if required, reclama-tion by artificial means is feasible at reasonable cost.	Soil and topographic conditions such that significant farm drainage will probably be required and if re-quired, reclama-tion by artificial means may be expensive but feasible.	Soil and topographic conditions such that significant farm drainage will prob-ably be required, and if required by artificial means, surface drainage is at least feasible.

## CLASS 6--NONARABLE

Includes lands which do not meet the minimum requirements of the next higher class, and small areas of arable land lying within larger bodies of nonarable land.

1/ Average for Root Zone and must be under soil, water and drainage conditions such that concentration will not become greater.

2/ Where slick spot conditions show deterioration of the subsoils, the land class must reflect the proportionate area occupied, as follows: class 1 up to 10%, class 2 10% to 20%, class 3 20% to 30%; if greater than 30% lands may be placed in a special Use class if other conditions warrant, otherwise in class 6.

DEPT. OF THE ARMY  
ENGINEER BUREAU  
WASHINGTON, D.C. 20315  
LAND CLASSIFICATION  
SCHEMATIC, 1961

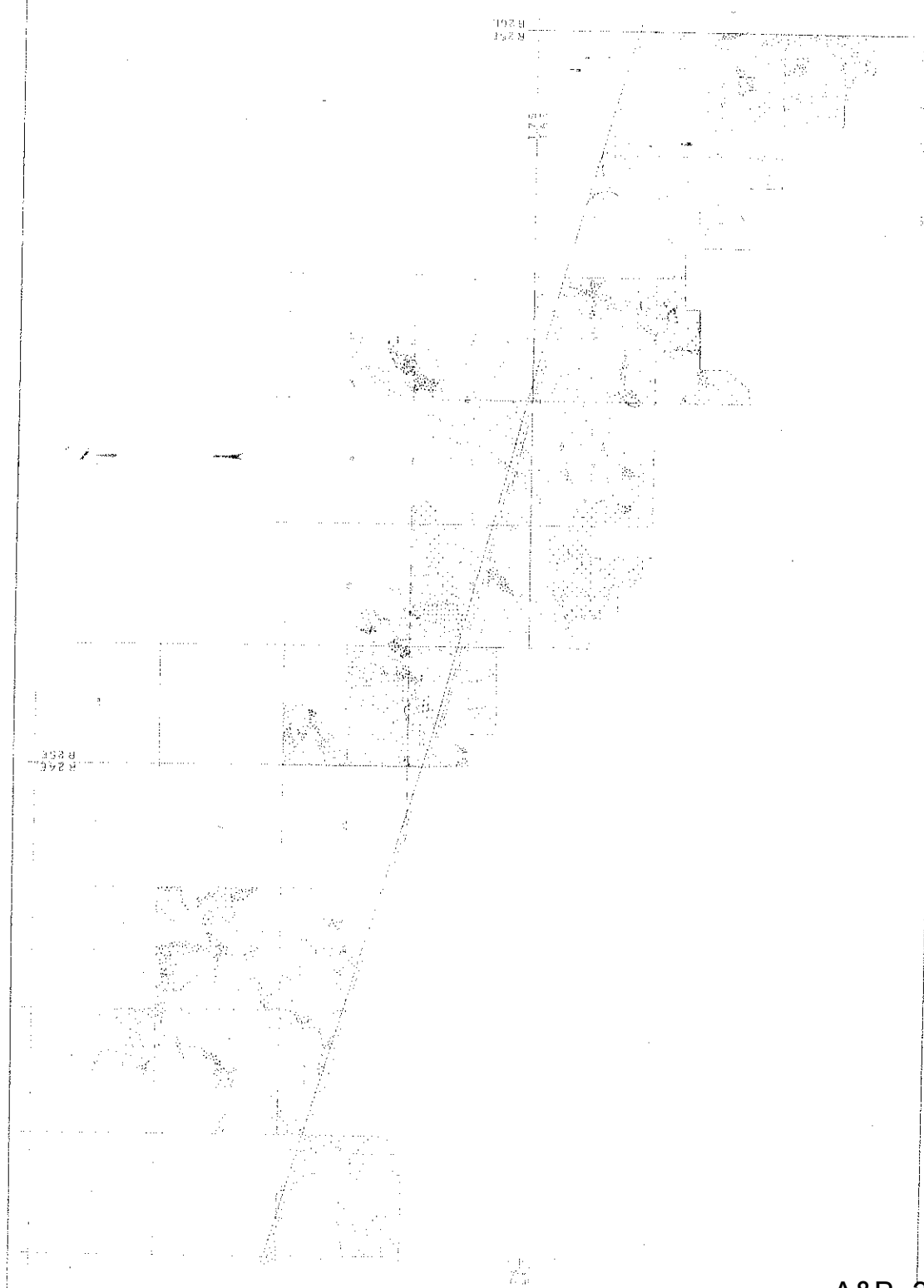




Table 5--ACREAGE OF LAND CLASSES - SUPPLEMENTAL SURVEY 1954

**NORTH SIDE PUMPING DIVISION**  
Minidoka Project, Idaho

Location			Arable					Non-Arable		
Sec.	Twp.	Rge.	1	2	3	5H	Total	4	6	Total
15	7	24	49.2	22.1	68.3		139.6	2.3	18.1	20.4
22	7	24	97.5	29.6	294.9		422.0	20.4	37.6	58.0
23	7	24	202.4	72.0	273.0		547.4	59.9	33.7	93.6
26	7	24	63.4	25.5	193.7		282.6	17.4	9.3	26.7
27	7	24	29.8	17.2	144.1		191.1	9.3	12.0	21.3
28	7	24	62.1	139.9	237.9		439.9	0.3	24.0	24.3
27	7	25	8.4	23.9	104.5		136.8	15.0	8.2	23.2
29	7	25	0.0	4.0	140.3		144.3	5.0	10.7	15.7
30	7	25	0.0	88.1	321.8		409.9	24.6	16.8	41.4
31	7	25	0.0	81.5	306.0		387.5	11.9	29.1	41.0
32	7	25	0.0	73.4	475.8		549.2	18.0	32.9	50.9
33	7	25	69.7	27.1	465.3		562.1	0.1	46.1	46.2
34	7	25	40.0	16.8	238.1		294.9	14.5	8.3	22.8
3	8	25	102.5	50.8	423.9		577.2	24.4	15.4	39.8
4	8	25	0.0	106.6	479.1		585.7	15.6	40.5	56.1
5	8	25	0.0	208.7	218.2		426.9	0.1	12.9	13.0
10	8	25	5.5	79.6	164.6		249.7	10.7	7.9	18.6
11	8	25	0.0	26.2	314.5		340.7	0.0	7.3	7.3
12	8	25	0.0	160.2	282.0		442.2	30.4	167.8	198.2
13	8	25	0.0	178.9	25.6		204.5	15.0	195.6	210.6
TOTALS			730.5	1432.1	5171.6		7334.2	294.9	734.2	1029.1

Table 5A--ACREAGE OF LAND CLASSES FROM INITIAL SURVEY

**NORTH SIDE PUMPING DIVISION**  
Minidoka Project, Idaho

Location			Arable				Non-Arable		
Sec.	Twp.	Rge.	1	2	3	Total	4P	6	Total
33	7	24		50.7	243.7	294.4	0.7	45.8	46.5
35	7	24	4.5	63.1	227.5	295.1	9.5	7.7	17.2
6	8	25		88.2	38.0	126.2		12.0	12.0
15	8	25		32.3	64.2	96.5		6.7	6.7
7	8	25	30.7	52.8	259.3	342.8	16.5	8.7	25.2
Totals			35.2	287.1	832.7	1155.0	26.7	80.9	107.6

LAND USE SURVEY DIVISION  
 Snake River Project, Idaho

LOCATION			ARABLE					NON-ARABLE		
Sec.	Twp.	Rge.	1	2	3	4	Total	4	6	Total
1	7	24	49.2	22.1	68.3		139.6	2.3	18.1	20.4
2	7	24	97.5	29.6	294.9		422.0	20.4	37.6	58.0
3	7	24	202.4	72.0	273.0		547.4	59.9	33.7	93.6
4	7	24	43.4	25.5	193.7		262.6	17.4	9.3	26.7
5	7	24	29.8	17.2	144.1		191.1	9.3	12.0	21.3
6	7	24	62.1	139.9	237.9		439.9	0.3	24.0	24.3
7	7	24	8.4	23.9	104.5		136.8	15.0	8.2	23.2
8	7	24	0.0	4.9	140.3		145.2	5.0	10.7	15.7
9	7	24	0.0	88.1	321.8		409.9	24.6	16.8	41.4
10	7	24	0.0	81.5	306.0		387.5	11.9	29.1	41.0
11	7	24	0.0	73.4	475.8		549.2	18.0	32.9	50.9
12	7	24	69.7	27.1	465.3		562.1	0.1	46.1	46.2
13	7	24	40.0	16.8	238.1		294.9	14.5	8.3	22.8
14	8	25	152.5	50.8	423.9		577.2	24.4	15.4	39.8
15	8	25	0.0	106.6	479.1		585.7	15.6	40.5	56.1
16	8	25	0.0	206.7	216.2		426.9	0.1	12.9	13.0
17	8	25	5.5	79.6	164.6		249.7	10.7	7.9	18.6
18	8	25	0.0	26.2	314.5		340.7	0.0	7.3	7.3
19	8	25	0.0	160.2	262.0		422.2	30.4	167.8	198.2
20	8	25	0.0	178.9	25.6		204.5	15.0	195.6	210.6
TOTALS			730.5	1432.1	5171.6		7334.2	294.9	734.2	1029.1

Acresage of Land Classes  
 (Not included in 1954 Supplement)

Location			Arable				Non-Arable		
Sec.	Twp.	Rge.	1	2	3	Total	4P	6	Total
33	7	24		50.7	243.7	294.4	0.7	45.8	46.5
35	7	24	4.5	63.1	227.5	295.1	9.5	7.7	17.2
6	8	25		88.2	38.0	126.2		12.0	12.0
15	8	25		32.3	64.2	96.5		6.7	6.7
7	8	25	30.7	52.8	259.3	342.8	16.5	8.7	25.2
TOTALS			35.2	287.1	832.7	1155.0	26.7	80.9	107.6



Class 1 lands which occupy about 10 percent of the irrigable area are of high quality, are well suited to all crops grown in the area and are capable of sustained yields under common agricultural practices. They can be prepared for irrigation at relatively low cost.

#### Class 2

The class 2 lands are somewhat inferior to those of class 1 in having limiting factors of soil, topography, and drainage singly or in combination, depending on the intensity of the deficiency. The surface soils are shallower than 14 inches over the compact lime horizon or they may contain enough "slick spots" to reduce their productiveness. Lime cemented developments in the subsoil may limit their effective root depth and productiveness or slight to moderate salinity may decrease yields and make leaching operations necessary.

Some of the class 2 lands have slopes from 3 to 7 percent; others are sufficiently uneven to require leveling for efficient irrigation. These land conditions tend to increase development costs.

In the virgin state class 2 lands are well drained, but under irrigation it may be necessary to provide drains and drainage outlets for a few local flat areas or basins and for more extensive flat lands along the drainage courses. It is not anticipated that lime cemented layers or zones will affect internal drainage materially.

The class 2 lands which occupy about 20 percent of the irrigable land in the area classified will generally be a little more costly to develop, and in some cases more costly to irrigate. Where the surface soils are shallower a more intensive soil management and fertility program will probably have to be carried on to bring the fertility level up to that of the class 1 lands. Also on the more sloping lands crop selection may be slightly more limited. They are, however, relatively high quality lands as has been demonstrated on similar Division lands and on those on adjacent projects.

#### Class 3

In the class 3 lands the deficiencies in soil, topography and drainage are more exacting than in class 2. These deficiency factors singly or in combination strongly influence the cost of land preparation for irrigation, the crop adaptability and cost of maintaining fertility. On nearby irrigation projects similar lands have been extensively developed for forage and cereal crops though they are not necessarily limited to those crops except where the soils are shallow or the lands more strongly sloping.

The surface soils are mostly, but not always, shallow over compacted or weakly cemented subsoils, which in turn may overlie lime hardpan or creviced bedrock at relatively shallow depths. In places the soils are deeper but salt concentrations in the highly calcareous cemented subsoil



and substrate developments lower their value or may possibly increase the time or cost of reclamation by leaching.

A considerable part of the class 3 land has slopes of 8 or 9 percent or lesser slopes with uneven surface. These features reduce the desirability of the lands for row crops and reduce yields because of cultural difficulties.

About 70 percent of the irrigable lands in the area recently classified are class 3.

#### Class 4P

Class 4P lands are low quality lands which ordinarily, on most projects, have only limited use for pasture. On this Division they were excluded from the irrigable acreage and water assessment because of the high cost of water. Only about 3 percent of the lands classified are class 4P.

These lands consist of a scattering of small areas with deficiencies in soil, topography, and occasionally drainage. Slopes range in gradient up to 18 percent when slopes are smooth or up to 12 percent when the slopes are rough and irregular. The soil depth may be shallow over creviced basalt or caliche. The shallower areas often have a scattering of loose rock and, in some areas, "slick spots" are numerous.

#### Class 6

The class 6 nonarable lands are those which do not meet the qualifications for any of the above classes. They consist principally of uneven shallow rocky soil areas, many of which are almost completely devoid of soil cover or covered with numerous rock outcroppings. They include also, small gully areas and small local enclosed basins without adequate drainage outlets. A few areas are definitely too high to be irrigated economically. Class 6 lands occupy about 9 percent of the area classified in this survey.

Table 6.—Land classification summary - supplemental survey 1954

North Side Pumping Division  
Minidoka Project, Idaho

Land Class	Arable Land Acres	Irrigable Land <u>1</u> Acres	Productive Land <u>2</u> Acres
Class 1	780.5	701.3	659.2
Class 2	1,432.1	1,374.8	1,292.3
Class 3	5,172.6	4,964.8	4,666.9
Total	7,385.2	7,040.9	6,618.4

- 1/ Arable less 4 percent for additional rights-of-way.
- 2/ Irrigable less 6 percent for farmsteads, farm roads, and farm ditches.

Table 6A--LAND CLASSIFICATION SUMMARY OF LANDS FROM INITIAL SURVEY

NORTH SIDE PUMPING DIVISION  
Minidoka Project, Idaho

Land Class	: Arable Land : Acres	: Irrigable Land 1/ : Acres	: Productive Land 2/ : Acres
Class 1	: 35.2	: 33.9	: 31.8
Class 2	: 287.1	: 275.7	: 259.2
Class 3	: 832.7	: 799.5	: 751.6
Totals	: 1,155.0	: 1,109.1	: 1,042.6

- 1/ Arable Land less 4 percent for additional rights-of-way.
- 2/ Irrigable Land less 6 percent for farmsteads, farm roads, and farm ditches.

Irrigability Classification and Development  
of the Group 7 Wells Area

The lands classified as irrigable in this supplemental survey and the previously classified lands included in the 8,150 irrigable acres of this group, like those elsewhere in Unit B, will obtain irrigation water by pumping from wells. Likewise, as determined by location, elevation and capacities of the individual wells, the potentially irrigable lands will be laid out into farm units of acceptable size (see memorandum - table 8.)

The irrigable area map of the supplemental survey of 1954, following page 14, shows the arable lands and the tentative exterior boundary of the irrigable lands upon completion of the survey and in table 6, the arable, irrigable, and productive acreages are shown. Table 5-A gives the location and land class breakdown of the lands previously classified, and in table 6-A, the arable, irrigable, and productive acreages of that area are shown. The irrigable acreages will be subject to some minor changes upon the completion of the farm unit layout.

- 1/ Arable less 4 percent for additional rights-of-way.
- 2/ Irrigable less 6 percent for farmsteads, farm roads, and farm ditches.

#### Irrigability Classification and Development

The lands classified in this supplemental survey, like those elsewhere in Unit 8, will obtain irrigation water by pumping from wells. Likewise, as determined by location, elevation and capacities of the individual wells, the potentially irrigable lands will be laid out into farm units of acceptable size (see memorandum - table 8).

The irrigable area map following page 14 shows the arable lands and the tentative exterior boundary of the irrigable lands upon completion of the survey and in table 6 the arable, irrigable and productive acreages are shown. ~~The map and the irrigable acreages~~ will be subject to some minor changes upon the completion of the farm unit layout.

Table 5A gives the location and land classification of the lands. Table 6A, the irrigable acreages.

#### Table 6A-Land Classification Summary

(Not included in 1954 Supplement)

NORTH SIOUX PLANNING DIVISION  
Montana Project - 1954

Land Class	: Arable Land : Acres	: Irrigable Land 1/ Acres	: Productive Land 2/ Acres
Class 1	: 35.2	: 33.9	: 31.8
Class 2	: 287.1	: 275.7	: 259.2
Class 3	: 832.7	: 799.5	: 751.6
Totals	: 1,155.0	: 1,109.1	: 1,042.6

- 1/ Arable Land less 4 percent for additional rights-of-way.
- 2/ Irrigable Land less 6 percent for farmsteads, farm roads, and farm ditches.



Table 7

## LAND CLASSIFICATION--SUMMARY DATA

DATE 11/15/54

1. AREA		2. BASE MAPS	
REGION <u>1</u>		AERIAL PHOTO <input checked="" type="checkbox"/>	SCALE <u>1:4800</u>
PROJECT <u>Minidoka Project, Idaho</u>		TOPOGRAPHIC <input checked="" type="checkbox"/>	SCALE <u>1:4800</u>
DIVISION <u>North Side Pumping Division</u>		PLANE TABLE <input type="checkbox"/>	SCALE _____
UNIT <u>Group 7 Wells Area</u>		OTHER <input type="checkbox"/>	SCALE _____
OTHER _____			

3. FIELD WORK  
INIT. 1947 & 1954 COMP. 7/1/54 OTHER 8/1/54 APPENDIX REPORT 11/15/54

4. ACREAGE CLASSIFIED				5. NUMBER OF BORINGS AND PITS				
	TOTAL SURVEY	PROJECT OR UNIT			SHALLOW (5')	MINIMUM	AVERAGE	TOTAL
		IRRIGATED	NON IRRIGATED	TOTAL		16 per section	22 per section	
CLASS 1	765.7		735.2	735.2				342
CLASS 2	1,719.2		1,650.5	1,650.5	DEEP (OVER 10')			6
CLASS 3	6,004.3		5,764.3	5,764.3	OPEN PIT OR DEEP PROFILES			6
CLASS 4	321.6		321.6	--	6. SUPPLEMENTAL PROCEDURES			
SUBTOTAL	8,810.8		8,471.6	8,150.0	SALINITY	<input checked="" type="checkbox"/>	SODIUM	<input checked="" type="checkbox"/>
CLASS 5					pH	<input checked="" type="checkbox"/>	GYPSUM	<input type="checkbox"/>
CLASS 6W					LINE	<input checked="" type="checkbox"/>	LEACHING	<input checked="" type="checkbox"/>
CLASS 6	815.1		815.1	815.1	MECH. ANAL.	<input checked="" type="checkbox"/>	ORG. MATTER	<input type="checkbox"/>
R.O.W.	384.8		352.0	339.2	H <sub>2</sub> O CONDUCT.	<input checked="" type="checkbox"/>	FIELD CAPACITY	<input checked="" type="checkbox"/>
TOTAL	10,010.7		9,638.7	9,304.3	INFILTRATION	<input checked="" type="checkbox"/>	WILTING POINT	<input checked="" type="checkbox"/>
* IRRIGABLE AREA, PRODUCTIVE AREA <u>7,661.0</u>				BULK DENSITY	<input checked="" type="checkbox"/>	H <sub>2</sub> O STABILITY	<input type="checkbox"/>	
ACREAGE NOT CLASSIFIED _____				OTHER	<input type="checkbox"/>			

## 7. SPECIFICATIONS AND INFORMATIVE APPRAISALS

TYPE OF SPECS.: GENERAL OR REGIONAL ☐ PHYSICAL ☐ PROJECT ☒ OTHER ☐

ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: average 12.38 \$ \_\_\_\_\_ \$ \_\_\_\_\_ \$ \_\_\_\_\_

TYPE OF APPRAISALS: LAND USE ☒ PRODUCTIVITY ☒ LAND DEVEL. ☒ WATER REQUIR. ☒

LAND DRAINABILITY ☒ OTHER ☐

DESCRIPTION OF CLASS 4: 4P not irrigable under project plans (see specifications)

DESCRIPTION OF CLASS 5: None

## 8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)

WATER SUPPLY ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ PAYMENT CAPACITY ☒

FARM UNIT LAYOUT ☒ REVIEW BY WATER USERS ☐ O.M.+R ☒

## 9. USE OF LAND CLASSIFICATION

WATER REQUIREMENTS ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ IRRIGATION ASSESSMENTS ☒

LAND APPRAISAL ☒ FARM UNIT DEVELOPMENT ☒ LAND USE AND MANAGEMENT ☒ IRRIGATION BENEFITS ☒ OTHER ☒

## 10. PRIOR SURVEYS OR CLASSIFICATIONS

TYPE AND AGENCY	YEAR	SCALE	COVERAGE
U.S.D.A. Soil Survey	1923	1"=1 mi. complete	

## 11. REVIEWS AND COOPERATION

OFFICE OR AGENCY	DATE
Ida. Experiment Sta. and Extension Service U.S.D.A. - F.H.A.	1947-48 4/10/50 and 4/30/54 Continuing

## 12. DATE OF SECRETARIAL CERTIFICATION



DATE 11/15/54

<div>ON <u>1</u></div> <div>JECT <u>Minidoka Project, Idaho</u></div> <div>DIVISION <u>North Side Pumping Division</u></div> <div>UNIT <u>Group 7 Wells Area</u></div> <div>OTHER _____</div>					2. BASE MAPS			
					AERIAL PHOTO <input checked="" type="checkbox"/>	SCALE <u>1:4,800</u>		
					TOPOGRAPHIC <input checked="" type="checkbox"/>	SCALE <u>1:4,800</u>		
					PLANE TABLE <input type="checkbox"/>	SCALE _____		
					OTHER <input type="checkbox"/>	SCALE _____		
3. FIELD WORK								
INIT. <u>1947 &amp; 1954</u>		COMP. <u>7/1/54</u>		OTHER <u>8/1/54</u>				
APPENDIX REPORT <u>11/15/54</u>								
4. ACREAGE CLASSIFIED								
	TOTAL SURVEY	PROJECT OR UNIT						
		IRRIGATED	NONIRRIGATED	TOTAL				
CLASS 1	765.7		735.2	735.2				
CLASS 2	1,719.2		1,650.5	1,650.5				
CLASS 3	6,004.3		5,764.3	5,764.3				
CLASS 4	321.6		321.6	--				
SUBTOTAL	8,810.8		8,471.6	8,150.0 *				
CLASS 5								
CLASS 6W								
CLASS 6	815.1		815.1	815.1				
R.O.W.	384.8		352.0	339.2				
TOTAL	10,010.7		9,638.7	9,304.3				
* IRRIGABLE AREA. PRODUCTIVE AREA <u>7,661.0</u>								
ACREAGE NOT CLASSIFIED _____								
5. NUMBER OF BORINGS AND PITS								
	MINIMUM	AVERAGE	TOTAL					
SHALLOW (5')	16 per section	22 per section	342					
DEEP (OVER 10')			6					
OPEN PIT OR DEEP PROFILES			6					
6. SUPPLEMENTAL PROCEDURES								
SALINITY	<input checked="" type="checkbox"/>	SODIUM	<input checked="" type="checkbox"/>					
PH	<input checked="" type="checkbox"/>	GYPSUM	<input type="checkbox"/>					
LINE	<input checked="" type="checkbox"/>	LEACHING	<input checked="" type="checkbox"/>					
MECH. ANAL.	<input checked="" type="checkbox"/>	ORG. MATTER	<input type="checkbox"/>					
H <sub>2</sub> O CONDUCT.	<input checked="" type="checkbox"/>	FIELD CAPACITY	<input checked="" type="checkbox"/>					
INFILTRATION	<input checked="" type="checkbox"/>	WILTING POINT	<input checked="" type="checkbox"/>					
BULK DENSITY	<input checked="" type="checkbox"/>	H <sub>2</sub> O STABILITY	<input type="checkbox"/>					
OTHER	<input type="checkbox"/>							
7. SPECIFICATIONS AND INFORMATIVE APPRAISALS								
TYPE OF SPECS.: GENERAL OR REGIONAL <input type="checkbox"/> PHYSICAL <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>								
ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: \$ <u>12.38</u> <u>average</u> \$ _____ \$ _____ \$ _____								
TYPE OF APPRAISALS: LAND USE <input checked="" type="checkbox"/> PRODUCTIVITY <input checked="" type="checkbox"/> LAND DEVEL. <input checked="" type="checkbox"/> WATER REQUIR. <input checked="" type="checkbox"/>								
LAND DRAINABILITY <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>								
DESCRIPTION OF CLASS 4: <u>4P not irrigable under project plans (see specifications)</u>								
DESCRIPTION OF CLASS 5: <u>None</u>								
8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)								
WATER SUPPLY <input checked="" type="checkbox"/> DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/> DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/> PAYMENT CAPACITY <input checked="" type="checkbox"/>								
FARM UNIT LAYOUT <input checked="" type="checkbox"/> REVIEW BY WATER USERS <input type="checkbox"/> O.M.+R <input checked="" type="checkbox"/>								
9. USE OF LAND CLASSIFICATION								
WATER REQUIREMENTS <input checked="" type="checkbox"/> DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/> DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/> IRRIGATION ASSESSMENTS <input checked="" type="checkbox"/>								
LAND APPRAISAL <input checked="" type="checkbox"/> FARM UNIT DEVELOPMENT <input checked="" type="checkbox"/> LAND USE AND MANAGEMENT <input checked="" type="checkbox"/> IRRIGATION BENEFITS <input checked="" type="checkbox"/> OTHER <input checked="" type="checkbox"/>								
10. PRIOR SURVEYS OR CLASSIFICATIONS								
TYPE AND AGENCY	YEAR	SCALE	COVERAGE					
U.S.D.A. Soil Survey	1923	1"=1 mi.	complete					
				11. REVIEWS AND COOPERATION				
OFFICE OR AGENCY				DATE				
Ida. Experiment Sta. and Extension Ser.				1947-48 4/10/50 and 4/30/54				
U.S.D.A. - F.H.A.				Continuing				
12. DATE OF SECRETARIAL CERTIFICATION								

TABLE 8  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Bureau of Reclamation  
Regional Office, Region 1  
Box 937, Boise, Idaho

740

April 13, 1954

## Memorandum

To: Regional Director, Bureau of Reclamation, Boise, Idaho

From: Karl J. Magleby, Farmers Home Administration, C. O. Youngstrom, University of Idaho Extension Service, and J. Karl Lee, Chief, Economic Resources Branch, Region 1, Bureau of Reclamation.

Subject: Size-of-Farm Units, Northside Pumping Division, Minidoka Project

The Size-of-Farm Committee for the North Side Pumping Division of the Minidoka Project met at Rupert, Idaho, on April 7, to reconsider, in light of operating experience, its original recommendation of April 10, 1950. Individuals present included:

<u>University of Idaho</u>	<u>Farmers Home Administration</u>	<u>Bureau of Reclamation</u>
Virgil Kennedy	Karl J. Magleby	O. L. Kims
Robert W. Wilcox	G. Bendixsen	Robert Pittard
William Fols	Willard Stevenson	L. R. Swarner
Vance Smith	Anders J. Passey	E. M. Poulson
Wilmer C. Priest		J. Karl Lee
E. M. Williams		

The Committee reviewed the operating experience to date, and made a short inspection trip to certain areas in and adjacent to the project, after which it met to determine whether or not it wished to modify its previous recommendation with respect to (1) size of units in terms of acreage equivalents and (2) conversion ratios for land classes 2 and 3.

As a result of its re-evaluation, the Committee recommended that as a minimum, farm units to be laid out in the future should not be less than 90 acres in size in terms of class 1 acreage equivalents, and that in determining acreage equivalents 1-1/4 acres of class 2 would continue to equal 1 acre of class 1, but that 1-1/2 acres of class 3, except where topography is the limiting factor, would equal 1 acre of

class 1. It was suggested that where topography is the limiting factor that the individuals laying out the farm units and reviewing them should use their judgment in determining suitable adjustments.

This recommendation results in some significant changes from the previous criteria followed. These changes are, (1) it increases the minimum size from 76 to 90 acres class 1 equivalent, (2) it changes the conversion ratio of class 3 to class 1 from 2 acres to 1-1/2 acres, (3) as result of these two changes noted above, it narrows the range of sizes between land classes, and (4) it eliminates the requirement that class 3 land be combined with better classes of land in farm units and makes it possible to lay out farm units entirely with class 3 land.

These recommendations appeared to be genuinely concurred in by everyone present. So far as we are able to determine, they do not represent a compromise in any respect. For that reason we are particularly pleased with the results of the meeting and consider the recommendations an improvement over the previous procedures.

The method of implementing the recommendation was discussed. It was pointed out that it would, of course, be impossible to change the size of the 157 units for which public notices have already been issued; and further that it would cause considerable delay if we made extensive changes in the other 150 farm units already laid out. In recognition of this latter condition, it was suggested that a representative of the Farmers Home Administration make an immediate review of these 150 units and that if there appeared to be any units that would not meet the FHA requirements for farm loans that an attempt would be made to adjust the size of such units within the framework of the general recommendation noted above. It was recognized, however, because adjoining units are of the desirable size and cannot be either increased or decreased in acreage, or because topographic features impose certain restrictions, that it may be impossible at this time to adjust the size of individual units within the group. It was also recognized that the preliminary review to be made by the Farmers Home Administration will not necessarily commit the Farmers Home Administration to subsequent approval of such units.

For the balance of approximately 400 units that are not yet laid out, it was agreed that the recommendation would be followed. The suggestion was made that it would be desirable to have a local representative of the Farmers Home Administration participate with Regional representatives in the review of the farm unit layout. It was also suggested if problems were encountered in the layout of the

balance of 400 units, the Bureau would review them with local representatives of the Farmers Home Administration and the University of Idaho and base their action on the combined recommendation of the group.

/s/ Karl J. Magleby  
Karl J. Magleby

/s/ C. C. Youngstrom  
C. C. Youngstrom

/s/ J. Karl Lee  
J. Karl Lee

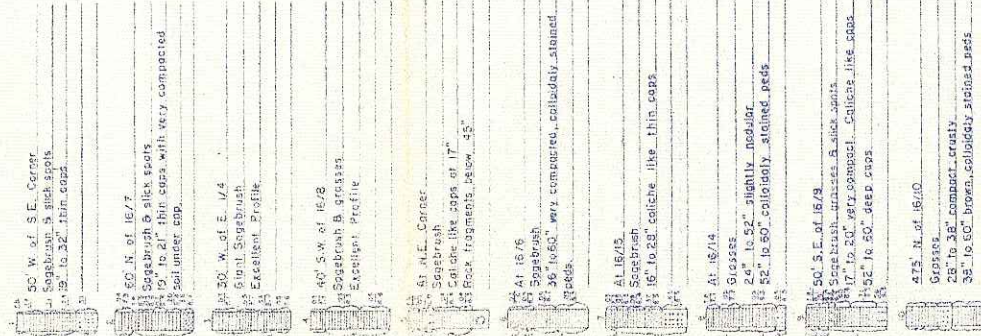
Attachments

Approved: April 26, 1954

/s/ H. T. NELSON  
Regional Director



GRAVEL, OR COBBLE	VERY PERMEABLE CLAYS
SANDS	PERMEABLE CLAYS
LOAMY SANDS	SLOWLY PERMEABLE CLAYS
LOAMY LOAM	CALICHEOUS HARDPAN
LOAMS & SILT LOAMS	CALICHE INDURATED
CLAY LOAMS	SOLID ROCK
PEBBLE BEDDMENTS 5' DEPTH	
10' DEPTH	
15' DEPTH	
20' DEPTH	
25' DEPTH	
30' DEPTH	
35' DEPTH	
40' DEPTH	
45' DEPTH	
50' DEPTH	
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375' N. of 16/13  
Grasses, sagebrush  
16" to 15" several thin caps, crusty  
appearance  
Large rock below 52"

At 16/15  
Sagebrush, slick spots  
16" thin calcareous like caps  
36" to 45" heavy soil seem to clay loam  
48" rock fragments

200' E. of S. 1/4  
Sagebrush, grasses, S surface rock  
17" thin calcareous like caps  
36" to 52" S.L. with small collindaly  
projected pebbles. Rock fragments below 32"

180' N. of 16/5  
Sagebrush, grasses, numerous surface rock  
20" calcareous like caps  
Rock fragments throughout profile

30' S. of 16/17  
Sagebrush, grasses, slick spots  
20" thin cap

400' S. of 16/12  
Sagebrush, stargrass, slick spots  
23" thin cap  
Large rock fragments below 13"

520' S. of W 1/4  
Cheatgrass  
Calcareous below 12"  
36" thin cap  
38" to 60" crusty slightly platy

70' E. of 16/4  
Cheatgrass  
Caps 5.2" & 32" 1/8" thick

At S.W. corner  
Cheatgrass  
16" to 24" mottled  
24" to 40" crusty salt caps  
Blocks outer of 40"

400 0 400 800

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

MINIDOKA PROJECT

NORTH SIDE PUMPING DIV.-IDAHO

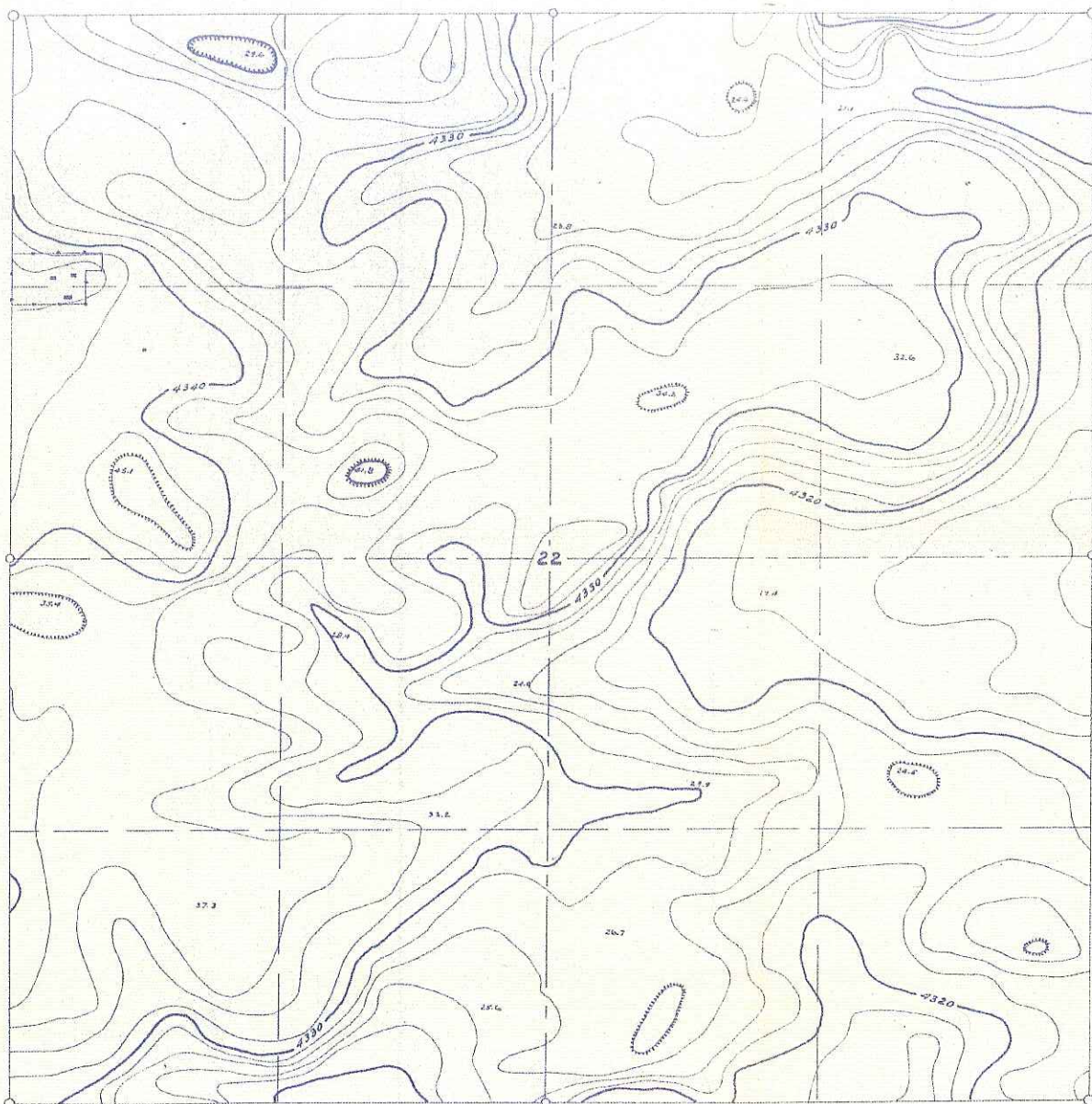
DETAILED LAND CLASSIFICATION

|          |         |             |
|----------|---------|-------------|
| SEARCHED | INDEXED | SUBMITTED   |
| TRACED   | FILED   | RECOMMENDED |
| CHECKED  |         | APPROVED    |

22 175 11245 ROISE IDAHO



2-H-7422



Sec. 22 T. 7S. R. 24E. B.M.

A&B 359

17-197-2082

50-F-20

## APPENDED MATERIAL

This part of the Supplement to the Project Lands Appendix of 1952 deals with that portion of the North Side Pumping Division of the Minidoka Project designated as the area to be served by the Group 8 Wells. This area is outlined on the map entitled Irrigation Development by Years, and on the land classification maps that follow.

The Group 8 Wells area consists of 3,100 irrigable acres, which, when added to the 69,500 irrigable acres initially certified in 1952, and the 8,150 acres covered for certification in the 1954 Supplement, raises the total acreage of the division proposed for development to 80,750 irrigable acres.

The derivation of the 3,100 irrigable acres for development in the area to be served by the Group 8 Wells is shown on the Land Classification Summary Data Sheet. The soils, land conditions and classification of these lands are described in the original 1952 Project Lands Appendix.

~~Draft~~  
~~ENPoulsen:ab~~  
June 8, 1956

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## A P P E N D E D   M A T E R I A L

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Table 9

## LAND CLASSIFICATION--SUMMARY DATA

DATE 6/6/56

|   |  |  |                     |
|---|--|--|---------------------|
| 1. AREA                                     |  | 2. BASE MAPS                                     |                     |
| REGION <b>I</b>                             |  | AERIAL PHOTO <input checked="" type="checkbox"/> | SCALE <b>1:4800</b> |
| PROJECT <b>Minidoka Project, Idaho</b>      |  | TOPOGRAPHIC <input checked="" type="checkbox"/>  | SCALE <b>1:4800</b> |
| DIVISION <b>North Side Pumping Division</b> |  | PLANE TABLE <input type="checkbox"/>             | SCALE               |
| UNIT <b>Group 8 Wells Area</b>              |  | OTHER <input type="checkbox"/>                   | SCALE               |
| OTHER                                       |  |  |                     |

|               |             |             |  |       |                 |
|---------------|-------------|-------------|--|-------|-----------------|
| 3. FIELD WORK | <b>1947</b> | <b>1950</b> |  |       | <b>1952</b>     |
| INIT.         |             | COMP.       |  | OTHER | APPENDIX REPORT |

| 4. ACREAGE CLASSIFIED             |              |                 |              |             | 5. NUMBER OF BORINGS AND PITS |                            |                            |             |
|-----------------------------------|--------------|-----------------|--------------|-------------|-------------------------------|----------------------------|----------------------------|-------------|
| CLASS                             | TOTAL SURVEY | PROJECT OR UNIT |              |             | SHALLOW (5')                  | MINIMUM <b>16 per sec.</b> | AVERAGE <b>22 per sec.</b> | TOTAL       |
|                                   |              | IRRIGATED       | NONIRRIGATED | TOTAL       |                               |                            |                            |             |
| CLASS 1                           | <b>447</b>   |                 | <b>429</b>   | <b>429</b>  |                               |                            |                            | <b>90</b>   |
|                                   | <b>1891</b>  |                 | <b>1815</b>  | <b>1815</b> |                               |                            |                            | <b>2</b>    |
| CLASS 2                           |              |                 |              |             |                               |                            |                            | <b>2</b>    |
| CLASS 3                           | <b>891</b>   |                 | <b>856</b>   | <b>856</b>  |                               |                            |                            |             |
| CLASS 4                           | <b>41</b>    |                 | <b>41</b>    | <b>-</b>    |                               |                            |                            |             |
| SUBTOTAL                          | <b>3270</b>  |                 | <b>3141</b>  | <b>3100</b> |                               |                            |                            |             |
| CLASS 5                           |              |                 |              |             |                               |                            |                            |             |
| CLASS 6W                          |              |                 |              |             |                               |                            |                            |             |
| CLASS 6                           | <b>475</b>   |                 | <b>475</b>   | <b>475</b>  |                               |                            |                            |             |
| R.O.W.                            | <b>135</b>   |                 | <b>129</b>   | <b>129</b>  |                               |                            |                            |             |
| TOTAL                             | <b>3880</b>  |                 | <b>2914</b>  | <b>3745</b> |                               |                            |                            | <b>3704</b> |
| * IRRIGABLE AREA. PRODUCTIVE AREA |              |                 |              |             |                               |                            |                            |             |
| ACREAGE NOT CLASSIFIED            |              |                 |              |             |                               |                            |                            |             |

| 6. SUPPLEMENTAL PROCEDURES |                                     |                            |                                     |
|----------------------------|-------------------------------------|----------------------------|-------------------------------------|
| SALINITY                   | <input checked="" type="checkbox"/> | SODIUM                     | <input checked="" type="checkbox"/> |
| pH                         | <input checked="" type="checkbox"/> | GYPSUM                     | <input type="checkbox"/>            |
| LINE                       | <input checked="" type="checkbox"/> | LEACHING                   | <input checked="" type="checkbox"/> |
| MECH. ANAL.                | <input checked="" type="checkbox"/> | ORG. MATTER                | <input type="checkbox"/>            |
| H <sub>2</sub> O CONDUCT.  | <input checked="" type="checkbox"/> | FIELD CAPACITY             | <input checked="" type="checkbox"/> |
| INFILTRATION               | <input checked="" type="checkbox"/> | WILTING POINT              | <input checked="" type="checkbox"/> |
| BULK DENSITY               | <input checked="" type="checkbox"/> | H <sub>2</sub> O STABILITY | <input type="checkbox"/>            |
| OTHER                      | <input type="checkbox"/>            |                            |                                     |

## 7. SPECIFICATIONS AND INFORMATIVE APPRAISALS

TYPE OF SPECS.: GENERAL OR REGIONAL ☐ PHYSICAL ☐ PROJECT ☒ OTHER ☐ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: **Average \$12.38**TYPE OF APPRAISALS: LAND USE ☒ PRODUCTIVITY ☒ LAND DEVEL. ☒ WATER REQUIR. ☒LAND DRAINABILITY ☒ OTHER ☐DESCRIPTION OF CLASS 4: **4P not irrigable under project plans (see specifications)**DESCRIPTION OF CLASS 5: **None**

## 8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED)

WATER SUPPLY ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ PAYMENT CAPACITY ☒FARM UNIT LAYOUT ☒ REVIEW BY WATER USERS ☐ O.M.+R ☒

## 9. USE OF LAND CLASSIFICATION

WATER REQUIREMENTS ☒ DISTRIBUTION SYSTEM PLAN ☒ DRAINAGE SYSTEM PLAN ☒ IRRIGATION ASSESSMENTS ☒LAND APPRAISAL ☒ FARM UNIT DEVELOPMENT ☒ LAND USE AND MANAGEMENT ☒ IRRIGATION BENEFITS ☒ OTHER ☒

## 10. PRIOR SURVEYS OR CLASSIFICATIONS

| TYPE AND AGENCY             | YEAR        | SCALE                      | COVERAGE | OFFICE OR AGENCY   | DATE                          |
|-----------------------------|-------------|----------------------------|----------|--|-------------------------------|
| <b>U.S.D.A. Soil Survey</b> | <b>1923</b> | <b>1" = 1 mi. Complete</b> |          | <b>Idaho Expt. Sta. and Extension Service<br/>U.S.D.A.-FHA</b> | <b>4/30/54<br/>continuing</b> |

## 12. DATE OF SECRETARIAL CERTIFICATION

## Table 9 LAND CLASSIFICATION--SUMMARY DATA

DATE 4/6/56

|                                      |  |  |                     |
|--------------------------------------|--|--|---------------------|
| 1. AREA                              |  | 2. BASE MAPS                                     |                     |
| REGION <u>I</u>                      |  | AERIAL PHOTO <input checked="" type="checkbox"/> | SCALE <u>1:4850</u> |
| PROJECT <u>Unit 1, Project Idaho</u> |  | TOPOGRAPHIC <input checked="" type="checkbox"/>  | SCALE <u>1:4800</u> |
| DIVISION <u>Idaho Soil Survey</u>    |  | PLANE TABLE <input type="checkbox"/>             | SCALE _____         |
| UNIT <u>Group 8 Wells Area</u>       |  | OTHER <input type="checkbox"/>                   | SCALE _____         |
| OTHER _____                          |  |  |                     |

|                   |                   |             |                             |  |
|-------------------|-------------------|-------------|-----------------------------|--|
| 3. FIELD WORK     |                   |             |                             |  |
| INIT. <u>1947</u> | COMP. <u>1950</u> | OTHER _____ | APPENDIX REPORT <u>1952</u> |  |

| 4. ACREAGE CLASSIFIED                         |              |                 |              | 5. NUMBER OF BORINGS AND PITS |   |   |           |
|---|--------------|-----------------|--------------|-------------------------------|---|---|-----------|
|   | TOTAL SURVEY | PROJECT OR UNIT |              |                               | MINIMUM   | AVERAGE   | TOTAL     |
|   |              | IRRIGATED       | NONIRRIGATED | TOTAL                         |   |   |           |
| CLASS 1                                       | <u>497</u>   |                 | <u>421</u>   | <u>429</u>                    | SHALLOW (5')  | <u>22 pc</u>  | <u>70</u> |
| CLASS 2                                       | <u>1891</u>  |                 | <u>1815</u>  | <u>1315</u>                   | DEEP (OVER 10')   |   | <u>2</u>  |
| CLASS 3                                       | <u>291</u>   |                 | <u>856</u>   | <u>856</u>                    | OPEN PIT OR DEEP PROFILES                                     |   | <u>2</u>  |
| CLASS 4                                       | <u>41</u>    |                 | <u>41</u>    |                               | 6. SUPPLEMENTAL PROCEDURES                                    |   |           |
| SUBTOTAL                                      | <u>3270</u>  |                 | <u>3141</u>  | <u>3100</u>                   | SALINITY <input checked="" type="checkbox"/>                  | SODIUM <input checked="" type="checkbox"/>          |           |
| CLASS 5                                       |              |                 |              |                               | pH <input checked="" type="checkbox"/>                        | GYPSUM <input type="checkbox"/>                     |           |
| CLASS 6W                                      |              |                 |              |                               | LINE <input checked="" type="checkbox"/>                      | LEACHING <input checked="" type="checkbox"/>        |           |
| CLASS 6                                       | <u>475</u>   |                 | <u>475</u>   | <u>475</u>                    | MECH. ANAL. <input checked="" type="checkbox"/>               | ORG. MATTER <input type="checkbox"/>                |           |
| R.O.W.  | <u>135</u>   |                 | <u>129</u>   | <u>129</u>                    | H <sub>2</sub> O CONDUCT. <input checked="" type="checkbox"/> | FIELD CAPACITY <input checked="" type="checkbox"/>  |           |
| TOTAL   | <u>3880</u>  |                 | <u>3745</u>  | <u>3704</u>                   | INFILTRATION <input checked="" type="checkbox"/>              | WILTING POINT <input checked="" type="checkbox"/>   |           |
| * IRRIGABLE AREA, PRODUCTIVE AREA <u>2714</u> |              |                 |              |                               | BULK DENSITY <input checked="" type="checkbox"/>              | H <sub>2</sub> O STABILITY <input type="checkbox"/> |           |
| ACREAGE NOT CLASSIFIED _____                  |              |                 |              |                               | OTHER <input type="checkbox"/>                                |   |           |

|   |  |  |  |
|---|--|--|--|
| 7. SPECIFICATIONS AND INFORMATIVE APPRAISALS  |  |  |  |
| TYPE OF SPECS.: GENERAL OR REGIONAL <input type="checkbox"/> PHYSICAL <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>   |  |  |  |
| ESTIMATE OF PAY. CAPACITY OF IRRIGABLE LAND CLASSES: <u>12.38</u> \$ _____ \$ _____ \$ _____  |  |  |  |
| TYPE OF APPRAISALS: LAND USE <input checked="" type="checkbox"/> PRODUCTIVITY <input checked="" type="checkbox"/> LAND DEVEL. <input checked="" type="checkbox"/> WATER REQUIR. <input checked="" type="checkbox"/> |  |  |  |
| LAND DRAINABILITY <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>  |  |  |  |
| DESCRIPTION OF CLASS 4: <u>4P not irrigable under project plan (see specifications)</u>   |  |  |  |
| DESCRIPTION OF CLASS 5: <u>None</u>   |  |  |  |

|  |  |  |  |
|--|--|--|--|
| 8. DETERMINATION OF IRRIGABLE AREA (STEPS COMPLETED) |  |  |  |
| WATER SUPPLY <input checked="" type="checkbox"/>     | DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/> | DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/> | PAYMENT CAPACITY <input checked="" type="checkbox"/> |
| FARM UNIT LAYOUT <input checked="" type="checkbox"/> | REVIEW BY WATER USERS <input type="checkbox"/>               | O.M.+R <input checked="" type="checkbox"/>               |  |

|  |  |   |   |
|--|--|---|---|
| 9. USE OF LAND CLASSIFICATION                          |  |   |   |
| WATER REQUIREMENTS <input checked="" type="checkbox"/> | DISTRIBUTION SYSTEM PLAN <input checked="" type="checkbox"/> | DRAINAGE SYSTEM PLAN <input checked="" type="checkbox"/>    | IRRIGATION ASSESSMENTS <input checked="" type="checkbox"/>  |
| LAND APPRAISAL <input checked="" type="checkbox"/>     | FARM UNIT DEVELOPMENT <input checked="" type="checkbox"/>    | LAND USE AND MANAGEMENT <input checked="" type="checkbox"/> | IRRIGATION BENEFITS <input checked="" type="checkbox"/> OTHER <input checked="" type="checkbox"/> |

| 10. PRIOR SURVEYS OR CLASSIFICATIONS |      |           |          | 11. REVIEWS AND COOPERATION            |            |
|--------------------------------------|------|-----------|----------|--|------------|
| TYPE AND AGENCY                      | YEAR | SCALE     | COVERAGE | OFFICE OR AGENCY                       | DATE       |
| USDR Soil Survey                     | 1923 | 1"=1 mile | complete | Idaho Expt. Sta. and Extension Service | 4/30/57    |
|                                      |      |           |          | USDA-FH A                              | continuing |

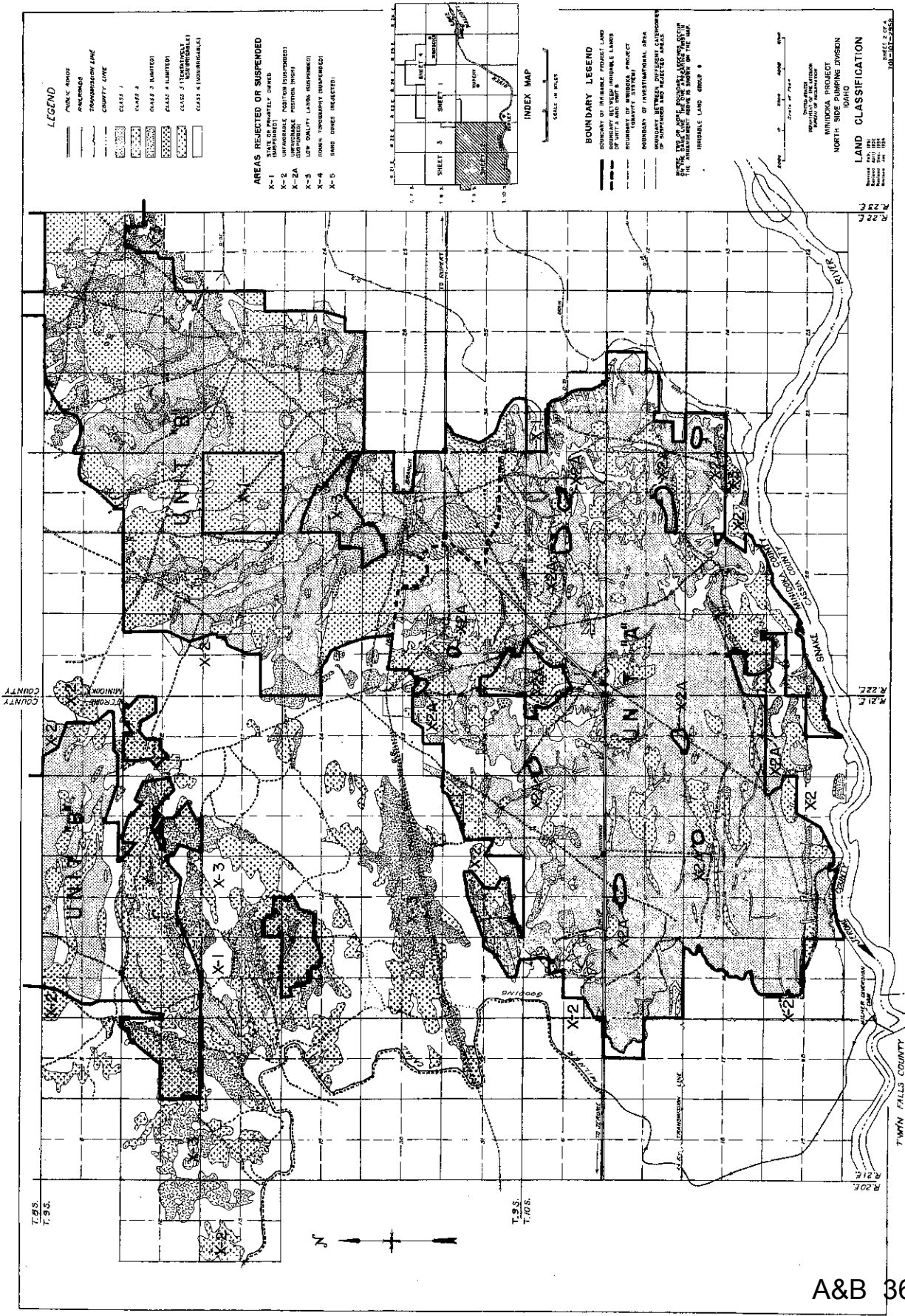
|   |
|---|
| 12. DATE OF SECRETARIAL CERTIFICATION _____ |
|---|









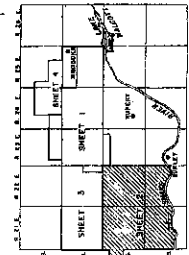


**LEGEND**

- PUBLIC ROADS
- RAILROADS
- TRANSMISSION LINE
- COUNTY LINE
- CLASS 1
- CLASS 2
- CLASS 3 LIMITED
- CLASS 4 LIMITED
- CLASS 5 (UNDESIRABLE)
- CLASS 6 (UNDESIRABLE)

**AREAS REJECTED OR SUSPENDED**

- X-1 STATE OR PRIVATELY OWNED (SUSPENDED)
- X-2 UNDESIRABLE (NOT FOR REJECTION)
- X-2A UNDESIRABLE (NOT FOR REJECTION)
- X-3 LOW QUALITY LAND (SUSPENDED)
- X-4 MODERATELY UNDESIRABLE (SUSPENDED)
- X-5 SAND DUNE REJECTED



**INDEX MAP**

SCALE IN FEET

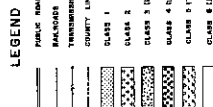
**BOUNDARY LEGEND**

- BOUNDARY OF INVESTIGATED LAND
- BOUNDARY BETWEEN UNDESIRABLE LANDS
- BOUNDARY OF UNIT 1 AND UNIT 2
- BOUNDARY OF INVESTIGATED PROJECT
- BOUNDARY OF INVESTIGATED AREA
- BOUNDARY BETWEEN DIFFERENT CLASSIFICATIONS
- BOUNDARY BETWEEN REJECTED AREAS

NOTE: THE ABOVE LEGEND IS SUBJECT TO THE MODIFICATIONS MADE IN THE MAP.

**LAND CLASSIFICATION**

UNIT 1  
UNIT 2  
UNIT 3  
UNIT 4  
UNIT 5  
UNIT 6  
UNIT 7  
UNIT 8  
UNIT 9  
UNIT 10

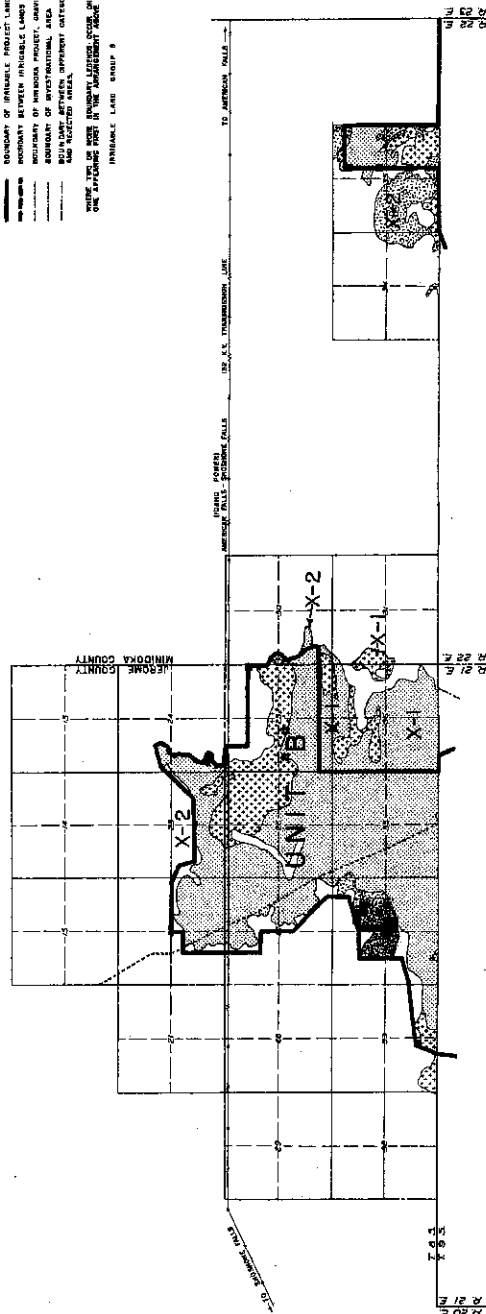


**AREAS REJECTED OR SUSPENDED**

- |       |   |
|-------|---|
| X-1   | STATE OR PRIVATE OWNED (SUSPENDED)      |
| X-2   | UNDESIRABLE POSITION (SUSPENDED)        |
| X-2 A | UNDESIRABLE POSITION (CHIN) (SUSPENDED) |
| X-3   | LOW QUALITY LAND (SUSPENDED)            |
| X-4   | NEAR TO FORESHORE (SUSPENDED)           |
| X-5   | SAND DUNES (REJECTED)                   |

**BOUNDARY LEGEND**

- [illegible]



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

MINDOKA PROJECT  
NORTH SIDE PUMPING DIVISION  
IDAHO

# LAND CLASSIFICATION

|            |            |
|------------|------------|
| Received   | Feb. 1934  |
| Serialized | April 1935 |
| Indexed    | Dec. 1934  |
| Filed      | Jan. 1935  |

INVEST 3 OF 4

INDEX 3 OF 4

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